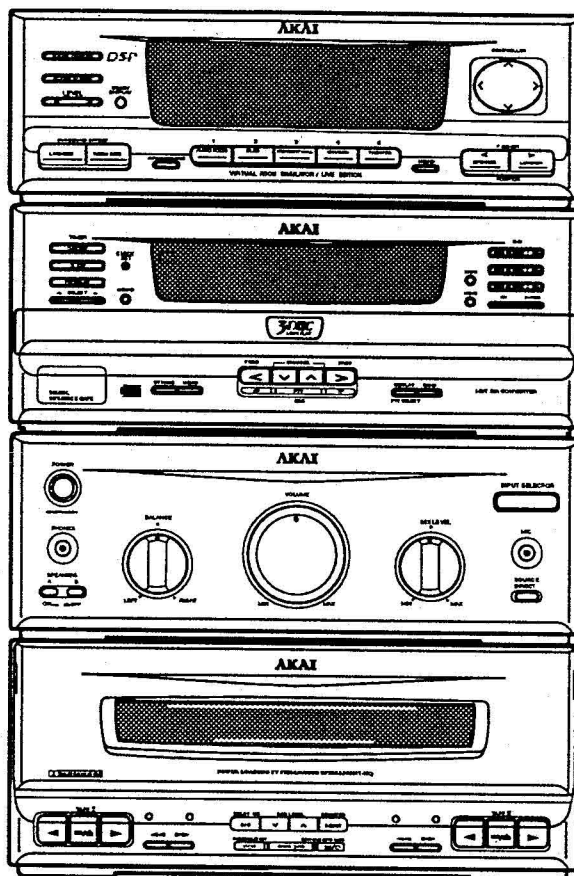


AKAI SERVICE MANUAL

COMPACT
disc
DIGITAL AUDIO



MODELS EA-890, TC-890 & AX-890

MINI STEREO COMPONENT SYSTEM

SYSTEM **RX-890** series (RX-893, 897)

TUNER CD PLAYER

MODEL **TC-590, 890**

STEREO DECK AMPLIFIER

MODEL **AX-890**

VIRTUAL ROOM SIMULATOR

MODEL **EA-890**

SPEAKER SYSTEM

MODEL **SR-890**

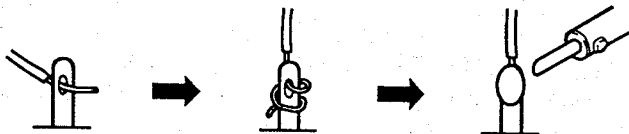
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★ SAFETY INSTRUCTIONS

PRECAUTIONS DURING SERVICING

1. Parts identified by the Δ (*) symbol are critical for safety. Replace them only with the parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation. These must also be replaced only with the specified replacements.
Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
 - 1) Wires covered with PVC tubing
 - 2) Double insulated wires
 - 3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
 - 1) Insulation Tape
 - 2) PVC tubing
 - 3) Spacers (insulating barriers)
 - 4) Insulation sheets for transistors
 - 5) Plastic screws for fixing micro switches
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap the ends of the wires securely around the terminals before soldering.



6. Make sure that wires do not contact heat producing parts (heat sinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Make sure that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

SAFETY CHECK AFTER SERVICING

After servicing, make measurements of leakage-current or resistance in order to determine that exposed parts are acceptably insulated from the supply circuit. The leakage-current measurement should be done between accessible metal parts (such as chassis, ground terminal, microphone jacks, signal input/output connectors, etc.) and the earth ground through a resistor of 1500 ohms paralleled with a 0.15 μ F capacitor, under the unit's normal working conditions. The leakage-current should be less than 0.5 mA rms AC. The resistance measurement should be done between accessible exposed metal parts and power cord plug prongs with the power switch (if included) "ON". The resistance should be more than 2.2M Ohms.

MAKE YOUR CONTRIBUTION TO PROTECT THE ENVIRONMENT

Used batteries with the ISO symbol for recycling as well as small accumulators (rechargeable batteries), mini-batteries (cells) and starter batteries should not be thrown into the garbage can.

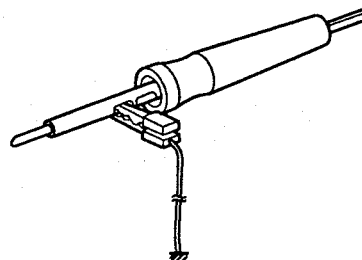
Please leave them at an appropriate depot.



PRECAUTIONS IN REPAIRING

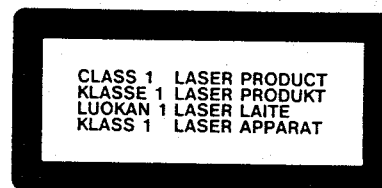
When repairing or adjusting the unit, please note the following points.

1. Do not put excessive pressure on the mechanical part (operation part), including the pick-up block, as extremely high mechanical precision is required in these parts.
2. When the base is removed for repair or adjustment, make sure that there are no metal objects in the narrow gap between the P.C. board or the mecha parts and the base.
3. The Micro-Computer and the CD signal processing ICs can be damaged by static electricity or leakage from a soldering iron during repairing. While soldering, please take the precautions against leakage as in the illustration.

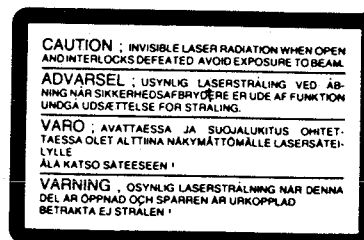


4. Do not loosen any screws in the pick-up block. When handling the pick-up block, please refer to the points to NOTE when replacing the pick up block.
5. To avoid hazardous invisible Laser Radiation, DO NOT look at the Laser Beam (Objective lens) directly.
6. On models for some countries, laser warning labels are affixed on the unit and inside of the unit, as shown below. For your safety, read these labels carefully when repairing or adjusting the unit.

[EUROPE, SCANDINAVIA, U.K. and AUSTRALIA]



Label affixed on the rear panel of the unit.



Label affixed on the reverse side of the rear panel of the unit (except $\square$ model).

INFORMATIONS

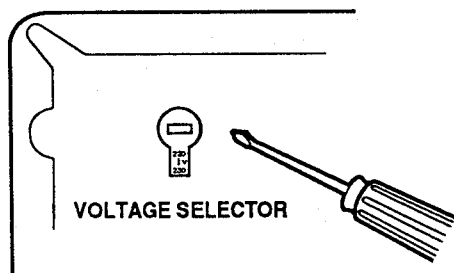
SYMBOLS FOR PRIMARY DESTINATION

Unit destinations are indicated with letters as shown below.

Symbols	Principal Destinations
A	U.S.A.
B	U.K.
C	Canada
E	Europe (except U.K.)
J	Japan
S	Australia
V	Germany
U	Universal Area
Y*	Custom version

VOLTAGE CONVERSION (U Model only)

Before connecting the power cord, set the VOLTAGE SELECTOR located on the rear panel of the AX-890 so that the correct voltage for your area is indicated.



PRECAUTION ABOUT THE POWER SUPPLY

The power supply of the TC-590,890 and EA-890 are supplied from the AX-890.

Transmission of the system control signal between the TC-590/890 and other components (AX-890, EA-890) is absolutely necessary to control the system. Therefore, when repairing one of the components of this MIDI STEREO COMPONENT SYSTEM, all components should normally be connected together. If all components are not available when repairing, the minimum combination of components that will be necessary for repair is as follows.

AX-890

The transmission of the system control signal between the TC-590/890, EA-890 and AX-890 is absolutely necessary to control the system in normal use. Also an audio signal selected in the AX-890 will be output to the EA-890 then return to AX-890. If the TC-590/890 and EA-890 are not available when repairing the AX-890, proceed as follows.

To turn the power on:

Press the power switch more than 5 seconds after the AC power cord is connected to the AC outlet.

Although the "INPUT SELECTOR" has no indication, it is possible to change the input source with the "INPUT SELECTOR" button. Pressing the "INPUT SELECTOR" button repeatedly will change the input source in the following order: CD → FM → TAPE-I → TAPE-II → PHONO → LINE. Repeated pressing of the button repeats this cycle. However if the EA-890 is not connected to the AX-890, no sound is heard from the speakers or headphones. Therefore if the EA-890 is not available, short the 1 pin and 2 pin (for R-ch), 4 pin and 5 pin (for L-ch) of the "CONTROL B" connector on the rear panel of the AX-890 respectively.

TC-590,890

Power for the TC-590 or TC-890 is supplied from the AX-890.

Also, transmission of the system control signal between the TC-590/890 and AX-890 is necessary to control the system. Therefore, when repairing the TC-590 or TC890, repair should be made together with the AX-890.

EA-890

Power for the EA-890 is supplied from the AX-890.

Also, transmission of the system control signal between the EA-890 and AX-890 is necessary to control the system.

Therefore, when repairing the EA-890, repair should be made together with the AX-890.



Tuner section	
FM	
RDS function (TC-890 only) .. PS/CT/AF/PTY/TP	
Tuning frequency range	87.5 to 108 MHz
Usable sensitivity	
(V)	17.2 dBf (IHF, 3 % THD)
(E, S, U)	13.2 dBf (IHF, 3 % THD)
Quieting sensitivity	
MONO	
(V)	21.2 dBf
(E, S, U)	17.2 dBf
STEREO	
(V)	35.2 dBf
(E, S, U)	31.2 dBf
S/N ratio (IHF)	
MONO	
(V)	65 dB
(E, S, U)	70 dB
STEREO	
(E, S, U, V)	60 dB
Frequency response	30 Hz to 15 kHz ± 1 dB
Total harmonic distortion	
MONO	0.3 % (at 1 kHz)
STEREO	0.7 % (at 1 kHz)
Selectivity	70 dB (±400 kHz)
Image rejection	
(V)	80 dB
(E, S, U)	50 dB
Stereo separation	42 dB (at 1 kHz)
Capture ratio	2 dBf
AM suppression	60 dB
Spurious rejection	80 dB
IF rejection	
(V)	105 dB
(E, S, U)	90 dB
MW	
Tuning frequency range	
(E, S, V)	531 to 1602 kHz (9 kHz step)
(U)	531 to 1602 kHz (9 kHz step)
	530 to 1710 kHz (10 kHz step)
Usable sensitivity	
S/N ratio	
Selectivity	
Image rejection	
IF rejection	
LW	
Tuning frequency range	
(E)	153 to 351 kHz (1 kHz step)
(S, U, V)	153 to 279 kHz (1 kHz step)
Usable sensitivity	
Selectivity	
Image rejection	
IF rejection	
CD section	
Type	3 discs auto changer
Pick up system	3 beam laser pick-up
Sampling frequency	44.1 kHz
Error correction system	Cross interleave reed solomon
Frequency response	20 to 20,000 Hz ± 1 dB
S/N ratio	97dB (A-weight)
Dynamic range	92 dB
Wow & flutter	Less than measurable limits
Total harmonic distortion	0.006% (at 1 kHz)
Channel separation	80 dB (at 1 kHz)
GENERAL	
Dimensions	270 (W) x 111 (H) x 330 (D) mm
Weight	3.0 kg
Power requirement	Supplied from AX-890
Power consumption	10 W (Nominal 8 W)
Standard accessories	
FM long wire antenna	x 1
AM loop antenna	x 1
Plug adaptor	x 1

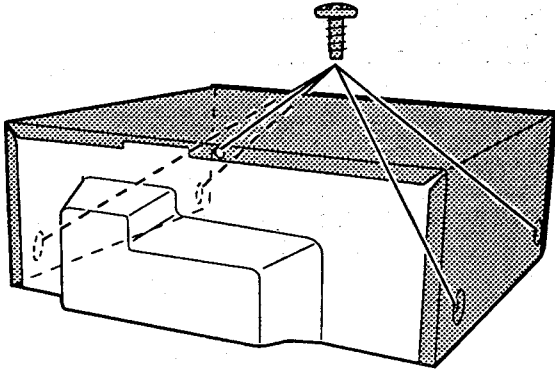
* For improvement purposes, specifications and design are subject to change without notice.

I. DISASSEMBLY

In case of trouble etc., necessitating dismantling, please dismantle in the order shown in the illustrations.
Reassemble in the reverse order.

1. Removal of UPPER COVER

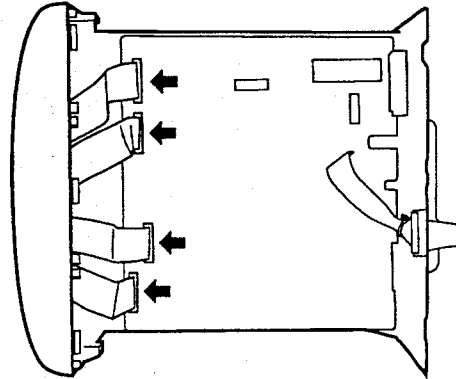
- 1) Remove the five screws.



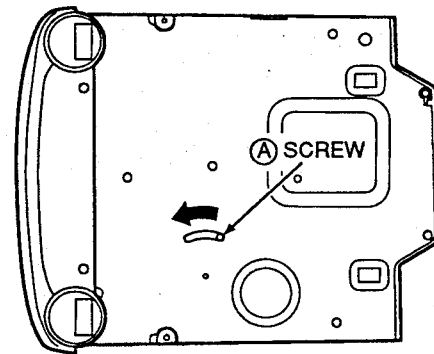
- 2) Remove the UPPER COVER.

2. Removal of FRONT PANEL

- 1) Disconnect the J500, J501, J502 and J503 connectors on the TU-CD PCB.
Refer to the note #1 on page 10 before disconnecting.

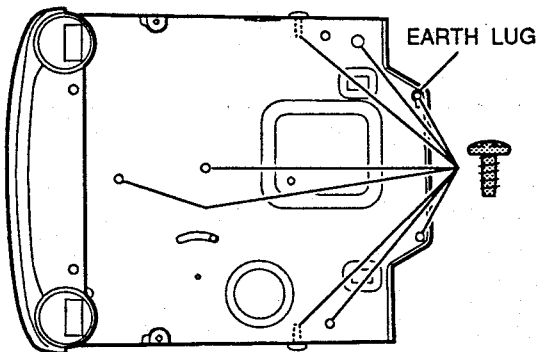


- 2) Slide the ① screw on the bottom in the forward direction with a philips type screwdriver. Then pull the TRAY in the forward direction.



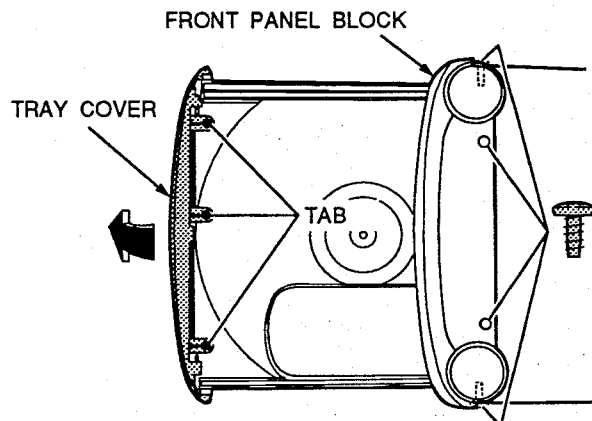
3. BOTTOM COVER

- 1) Remove the four FRONT PANEL retaining screws (refer to steps 4) and 5) of step 2). (It is not necessary to remove the FRONT PANEL BLOCK completely.)
- 2) Remove the two screws on the side and six screws on the bottom.



- 3) Remove the BOTTOM COVER by pulling it backward carefully.

- 3) While pulling up the three tabs, remove the tray cover by carefully pulling it off in the direction of the arrow.



- 4) Remove the two screws on both sides and the two screws on the bottom.
- 5) While pulling the tabs on the side outwards, remove the FRONT PANEL BLOCK.

II. PRINCIPAL PARTS LOCATION

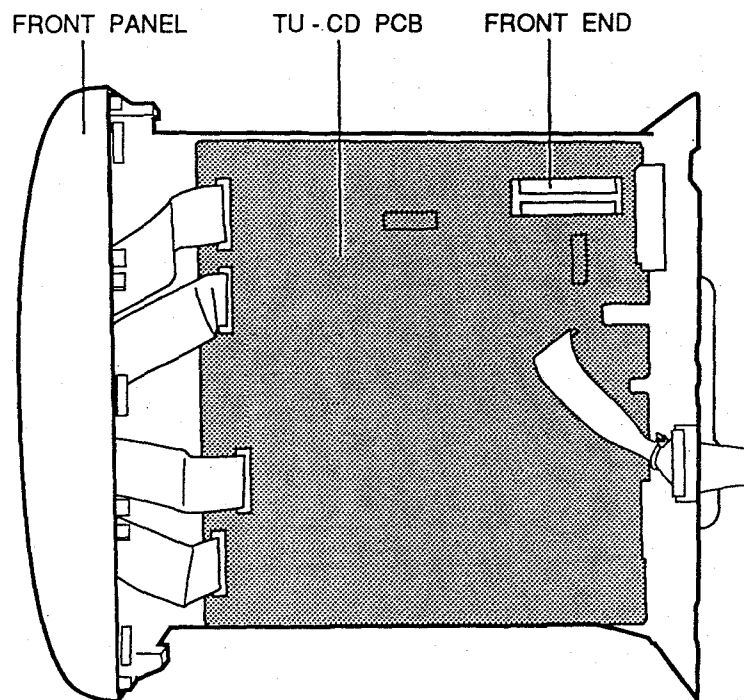


Fig. 2-1 Top view (1)

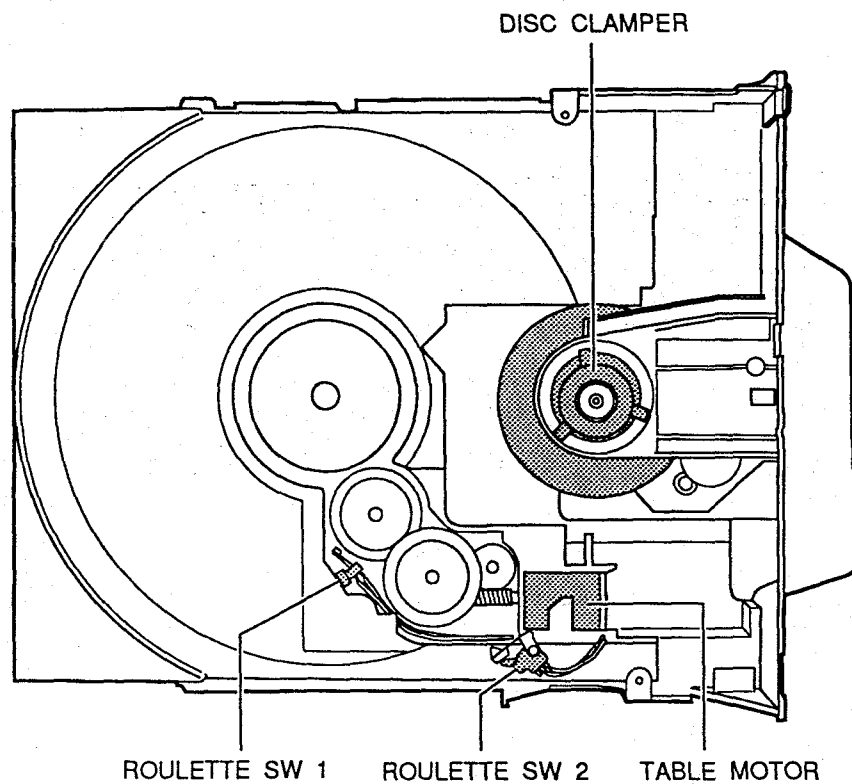


Fig. 2-2 Top view (2)

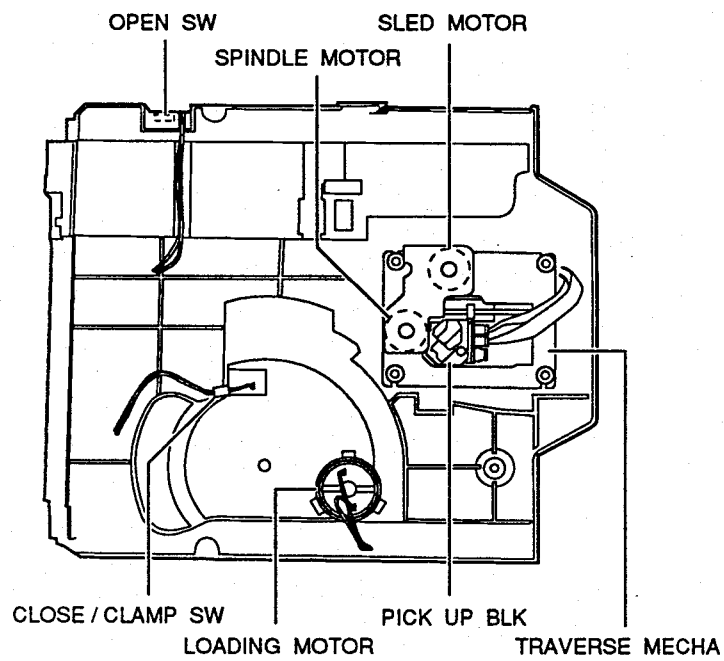


Fig. 2-3 Bottom view

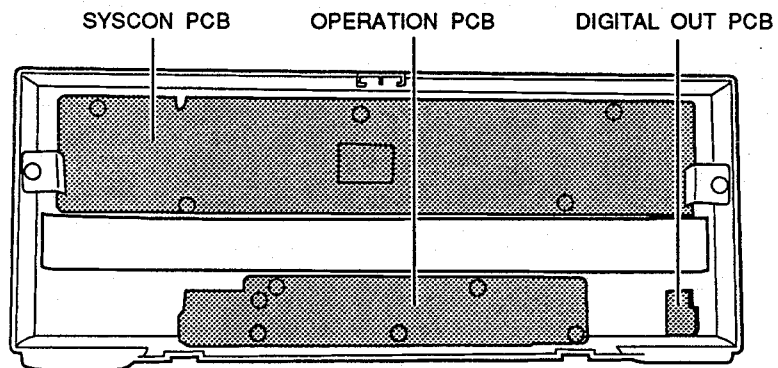


Fig. 2-4 Front panel

III. MAIN COMPONENTS REPLACEMENT

3-1. REMOVAL OF THE TRAVERSE MECHA.

- 1) Remove the BOTTOM COVER (refer to page 6).
- 2) Short the circuit on the PICK UP BLOCK with solder as shown in Fig. 3-1.

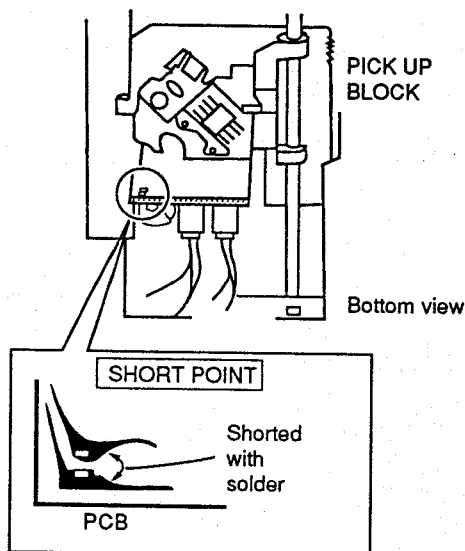


Fig. 3-1

- 3) Disconnect the three connectors carefully (two connectors are on the PICK UP PCB and the other is on the MOTOR PCB of the TRAVERSE MECHA.).

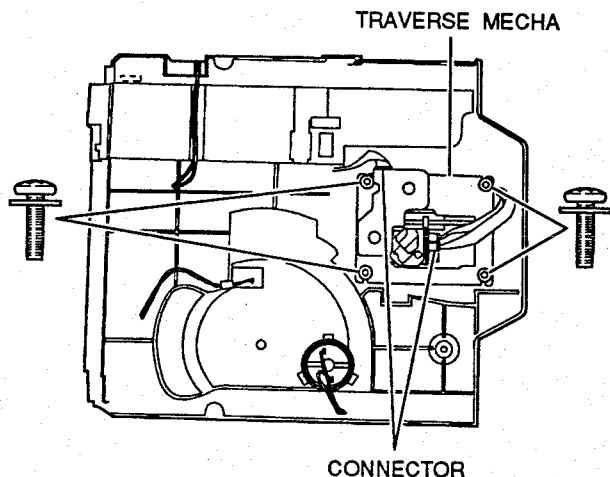


Fig. 3-2

- 4) Remove the four retaining screws, then remove the PICK UP BLOCK.
- 5) Proceed in the reverse order for installation but never unsolder the shorted part before connecting the three connectors.

Note:

To protect the laser diode from damage caused by high voltage static electricity, a part of the PCB on the PICK UP BLOCK has to be shorted before disconnecting the connectors. After replacement, be sure to connect the two connectors and then remove the solder at the shorted part before turning the power ON.

3-2. REPLACEMENT OF THE SLED MOTOR

- 1) Remove the TRAVERSE MECHA (refer to section 3-1).
- 2) Unsolder the leads of the SLED and SPINDLE MOTORS then remove the MOTOR PCB.

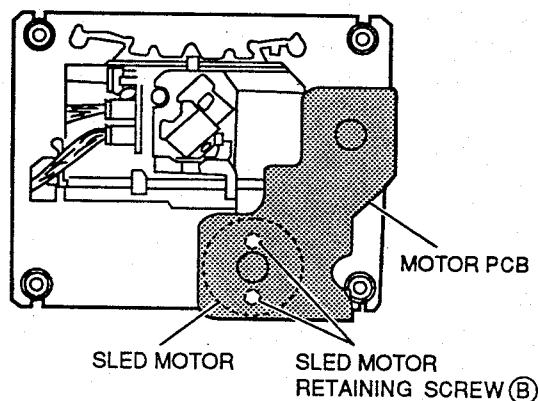


Fig. 3-3

- 3) Remove the SLED MOTOR RETAINING (B) SCREWS, then replace the SLED MOTOR.
- 4) Reassemble in the reverse order.

About the SPINDLE MOTOR:

Replacement of the SPINDLE MOTOR itself is not recommended because the adjustment of the TURN TABLE height is quite critical and requires the use of a special jig.

3-3. REPLACEMENT OF THE PICK UP BLOCK

- 1) Remove the TRAVERSE MECHA (refer to section 3-1).
- 2) Push the (A) stopper in the right direction and pull the SLIDE SHAFT in the forward direction to remove the PICK UP BLOCK, then replace the PICK UP BLOCK.

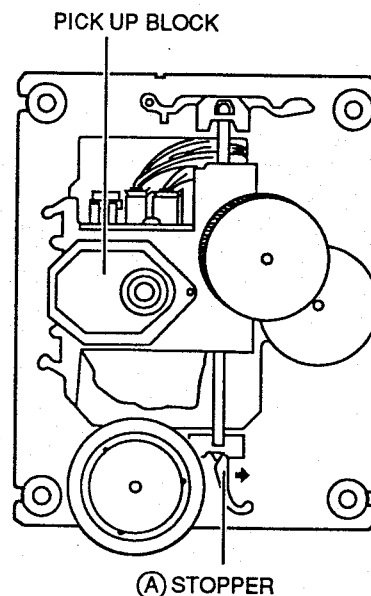


Fig. 3-4

- 3) Reassemble in the reverse order.

- 3) Unhook the LOADING BELT with tweezers.
- 4) Unsolder the lead wires of the LOADING MOTOR with a soldering iron.
- 5) While opening the LOADING MOTOR's three retaining tabs, push the motor pulley part down with your middle finger to remove the LOADING MOTOR, then replace it.

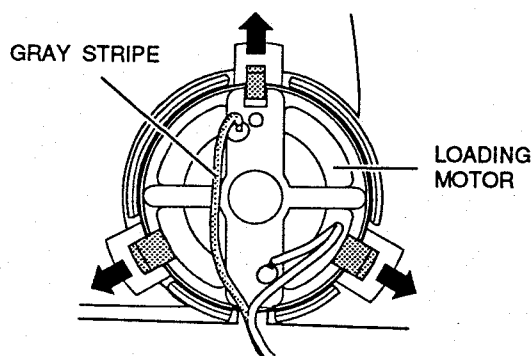


Fig. 3-9

- 6) Reassemble in the reverse order. Make sure that the wire with the gray stripe is connected to the motor's O marked terminal when soldering.

3-6. REMOVAL OF THE TRAY BLOCK

- 1) Remove the FRONT PANEL BLOCK and BOTTOM COVER (refer to page 6).
- 2) Remove the TU-CD PCB (refer to page 10).
- 3) If the TRAY BLOCK is at the "in" position, slide the GEAR HOLDER retaining screw in the direction of the arrow and pull out the TRAY BLOCK slowly (refer to Fig.3-8).
- 4) Remove the PCB HOLDER retaining screws then remove the PCB HOLDER and the BRACKETs on both sides.

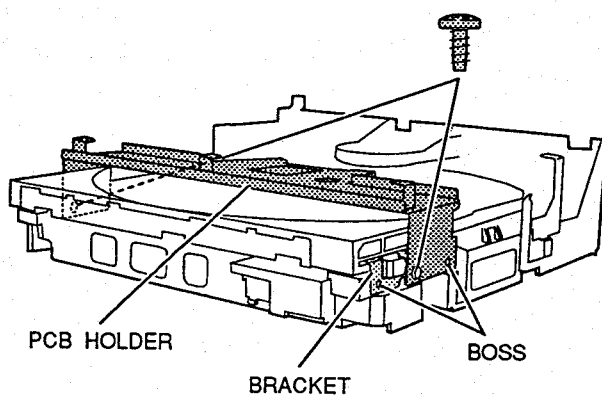


Fig. 3-10

- 5) Remove the TRAY BLOCK.

3-7. REPLACEMENT OF THE TABLE MOTOR

- 1) Remove the TRAY BLOCK (refer to section 3-6).
- 2) Remove the DISC HOLDER retaining screw, then remove the DISC HOLDER.

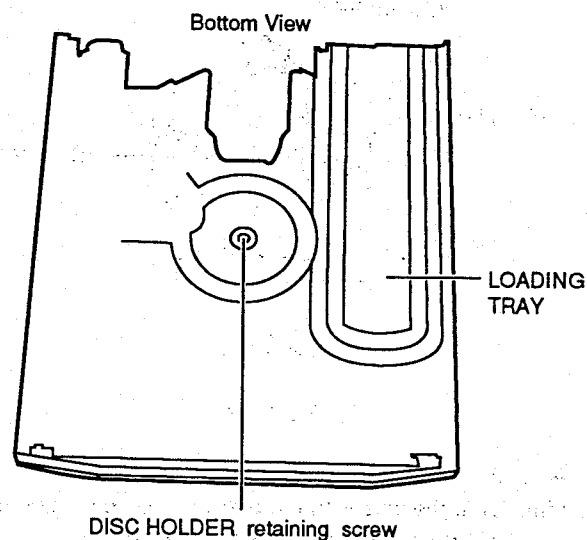


Fig. 3-11

- 3) Remove the TABLE GEAR (B) and WORM WHEEL TABLE GEAR.

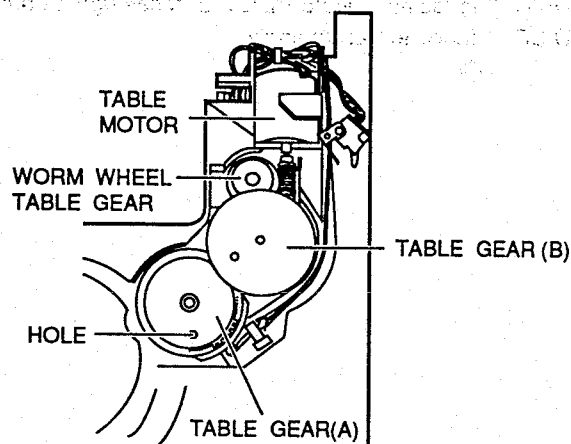


Fig. 3-12

-
- 4) Unsolder the lead wires of the TABLE MOTOR.
 - 5) Remove the TABLE MOTOR while opening the TABLE MOTOR retaining hook and squeezing the motor stopper. Then replace the TABLE MOTOR.

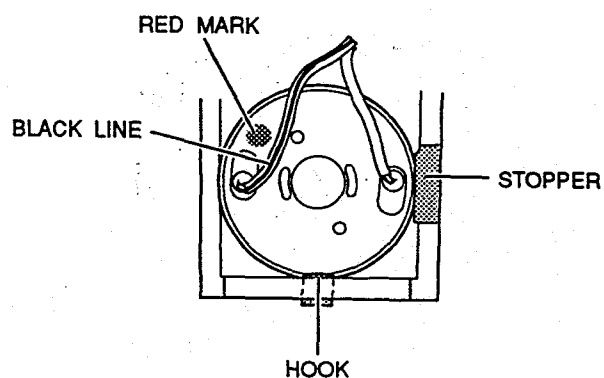


Fig. 3-13

- 6) Reassemble in the reverse order.
 - Make sure the wire with the black line is connected to the motor's red side terminal when soldering.
 - When attaching the TABLE GEAR (B), make sure that the TABLE GEAR (A)'s hole is aligned with its reference hole on the LOADING TRAY.
 - When installing the DISC HOLDER on the LOADING TRAY, make sure to place the DISC HOLDER so that "DISC 3" is facing upward ("DISC 2" faces right and label "DISC 1" faces left accordingly).

IV. ADJUSTMENT (TUNER SECTION)

Note: There is no adjustment for the CD player.

4-1. INSTRUMENT CONNECTIONS

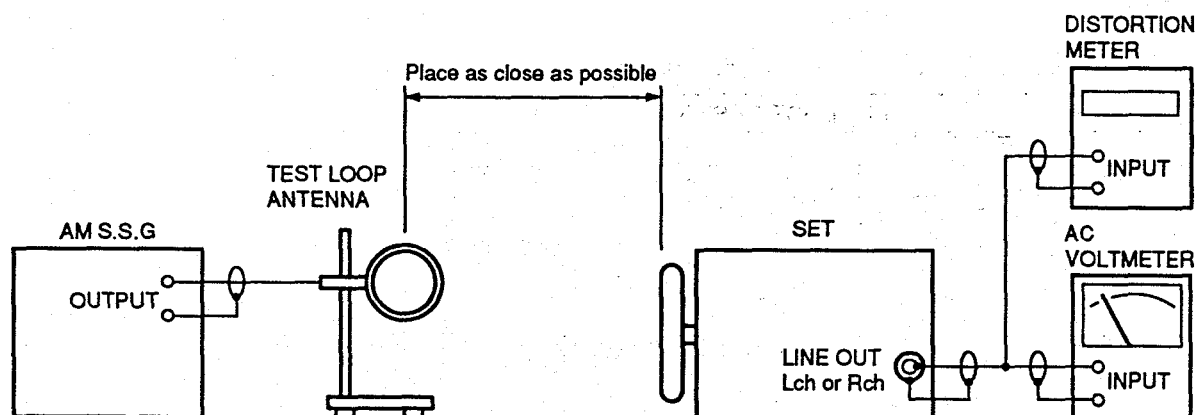


Fig. 4-1 Instrument connection for AM tuner adjustment

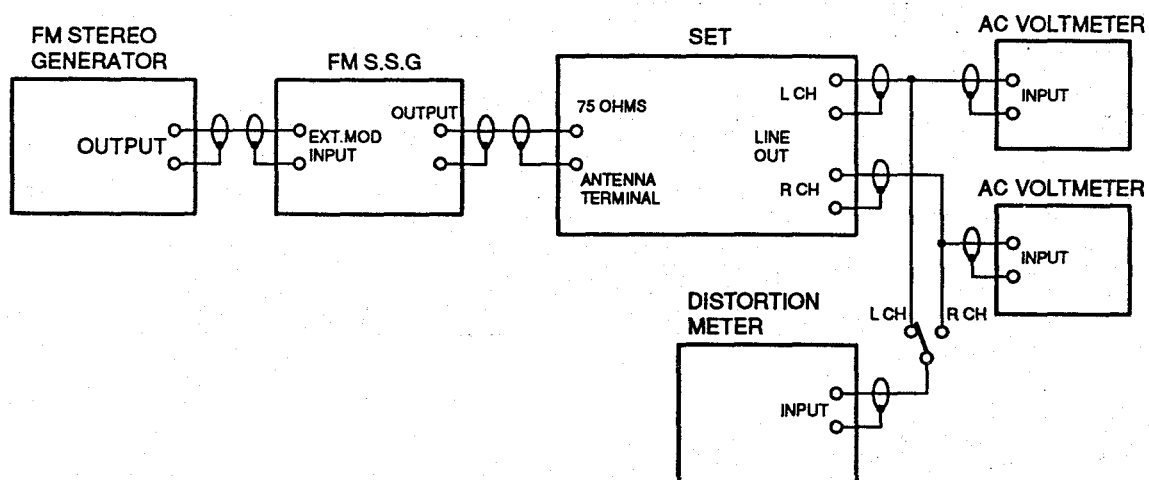


Fig. 4-2 Instrument connection for FM tuner adjustment

Note:

Before making adjustment, select the tuner mode (FM, MW or LW) by pressing the "INPUT SELECTOR" button on the AX-890, then select the tuner band with the "BAND" button on the TC-590,890 according to the adjustment procedure.

4-2. HOW TO CALL THE PRESET FREQUENCY FOR THE ADJUSTMENT

The preset frequency can be called with the "TUNER/CD 10 KEY" buttons on the remote control unit. To clear the previous preset stations, press the "RESET" button on the rear panel before proceeding. The internal frequency preset memory is set as shown below.

Initial preset frequency for adjustment and inspection.

PRESET ch No.	PRODUCT DESTINATION					
	[S], [U], [V]			[E]		
1	FM	98.0 MHz	AUTO	FM	98.0 MHz	AUTO
2	FM	88.0 MHz	MONO	FM	88.0 MHz	MONO
3	FM	108.0 MHz	MONO	FM	108.0 MHz	MONO
4	LW	162 kHz		LW	162 kHz	
5	LW	279 kHz		LW	297 kHz	
6	LW	198 kHz		LW	198 kHz	
7	MW	1404 kHz		MW	1404 kHz	
8	MW	603 kHz		MW	603 kHz	
9	MW	999 kHz		MW	999 kHz	
10	LW	279 kHz		LW	351 kHz	
11	FM	87.5 MHz	MONO	FM	87.5 MHz	MONO
12	FM	90.0 MHz	MONO	FM	90.0 MHz	AUTO
13	FM	106.0 MHz	MONO	FM	106.0 MHz	MONO
14	MW	531 kHz		MW	531 kHz	
15	MW	1602 kHz		MW	1602 kHz	
16	LW	153 kHz		LW	153 kHz	
17	FM	87.5 MHz		LW	288 kHz	
18 - 30	FM	87.5 MHz	AUTO	FM	87.5 MHz	AUTO

Note: About tuning step conversion (effective on [U] version only)

The MW frequency band of this unit is preset to 9 kHz tuning intervals. However, the frequencies of MW broadcasts in some countries are set at 10 kHz intervals.

If your country uses 10 kHz tuning intervals, the following tuning step conversion is necessary before you can tune in stations.

1. Turn the power ON.

2. Select the tuner mode by pressing the "INPUT SELECTOR" button.

3. Select the "FM mono" mode by pressing the "BAND" button.

4. Press and hold the "BAND" button for over 5 seconds until [AM 530 kHz] appears on the FL display. Tuning intervals will now be set to 10 kHz.

- To reset the unit to 9 kHz tuning intervals:

Press the "RESET" button located on the rear panel.

* The LW frequency band can not be selected with the "BAND" button at MW 10 kHz tuning interval mode.

* The preset frequency can not be called with "TUNER/CD 10 KEY" button at MW 10 kHz tuning interval mode.

4-3. ADJUSTMENT

NOTE:

1. Set the S.S.G to 1 kHz, 75 kHz deviation for **U**, **S**, **B**, or **E** model and 1 kHz 40 kHz deviation for **V** model during FM section adjustment.
2. Set the S.S.G to 1 kHz, 30 % modulation during AM section adjustment. The frequencies indicated in < > are for the **E** version model.

STEP ADJUSTMENT ITEM

1. S.S.G frequency & output level
2. Set's tuning frequency & mode
3. Test point, adjustment part
4. Remarks (•) & result (*)

Test Point Adjustment Part

FM

3 FM TUNING INDICATOR

1. 98.0 MHz, 22 dBμ (MONO)
2. 98.0 MHz (preset 1 ch but FM MONO)
3. Tuning Indicator on the FLD, VR1
4. * Tuning indicator is lit at 22 dBμ input.

2 MONO USABLE SENSITIVITY

1. 98.0 MHz, 3 dBμ (MONO)
2. 98.0 MHz (preset 1 ch but FM MONO)
3. T2
4. • Connect the distortion meter to the LINE OUT.
* Minimum distortion

4 DISTORTION (STEREO)

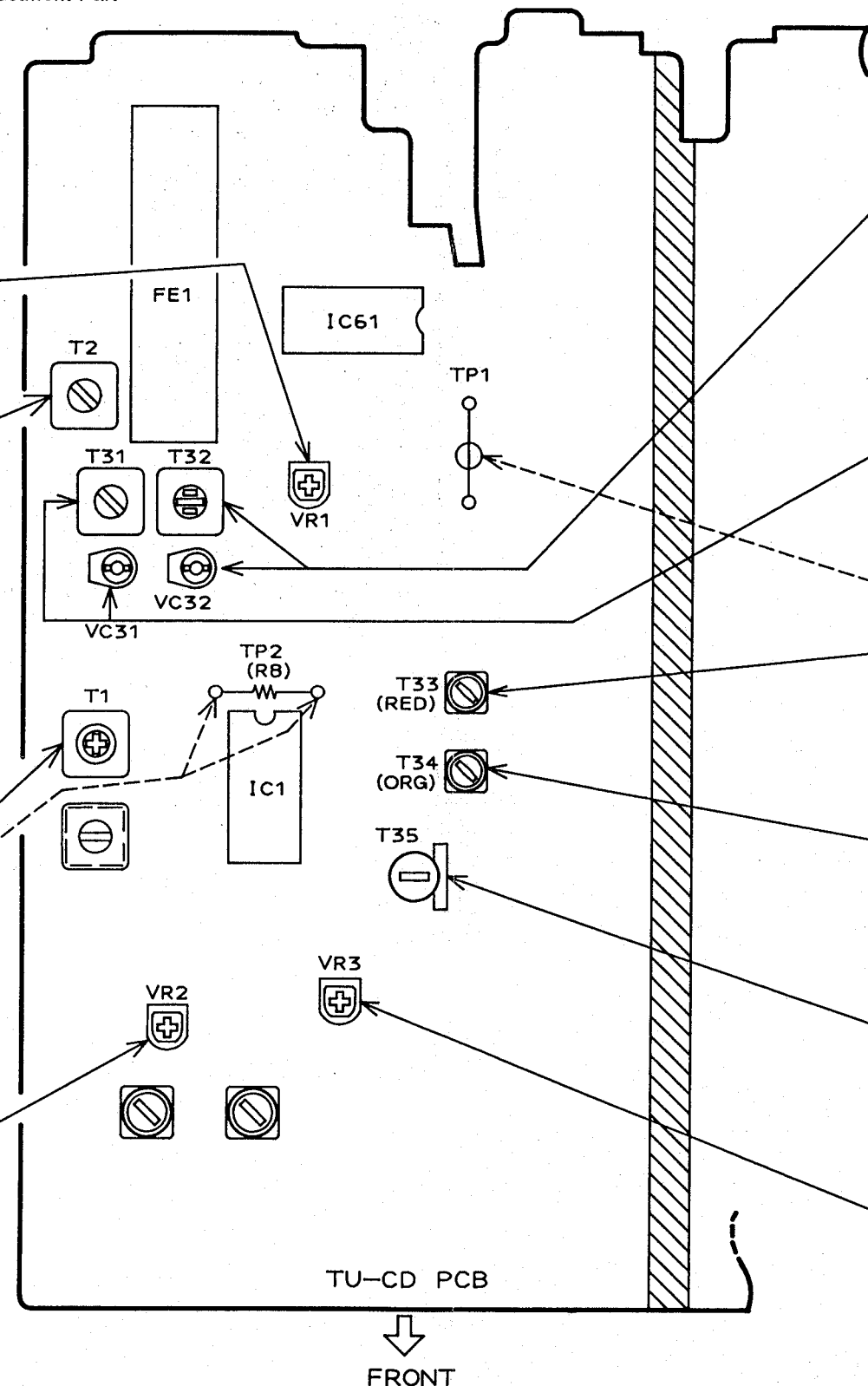
1. 98.0 MHz, 60 dBμ (STEREO L or R channel only)
2. 98.0 MHz (FM AUTO, preset 1 ch)
3. T2
4. • Connect the distortion meter to LINE OUT.
* Minimum Distortion (less than 1.0 %)
Note: Never turn the T2 more than ± 90°.

1 CENTER VOLTAGE

1. 98.0 MHz, 60 dBμ (MONO)
2. 98.0 MHz (FM AUTO, preset 1 ch)
3. T1
4. • Connect the DC Digital Voltmeter to both ends of TP2(R8).
* 0 ± 50 mV

5 STEREO SEPARATION

1. 98.0 MHz, 60 dBμ (STEREO L or R channel only)
2. 98.0 MHz (FM AUTO, preset 1 ch)
3. VR2
4. • Connect the milli-voltmeter to LINE OUT.
* Minimum output level for opposite channel.



AM

3 LW SENSITIVITY

1. 162 kHz, 74 dBμ (Low) & 279 kHz <297 kHz>, 74 dBμ (High)
2. 162 kHz (preset 4 ch), 279kHz <297 kHz> (preset 5 ch)
3. T32 (Low), VC32 (High)
4. • Connect the distortion meter to LINE OUT.
* Minimum distortion & maximum output level.
* For best results, repeat Low and High adjustments several times.

4 MW SENSITIVITY

1. 603 kHz, 74 dBμ (Low) & 1,404 kHz, 74 dBμ (High)
2. 603 kHz (Low) (preset 8 ch) 1,404 kHz (High) (preset 7 ch)
3. T31 (Low) & VC31 (High)
4. • Connect the distortion meter to LINE OUT.
* Minimum distortion & maximum output level.
* For best results, repeat Low and High adjustments several times.

2 MW OSC

1. -
2. 1,404 kHz (preset 7 ch)
3. T33
4. • Connect the Digital DC Voltmeter between TP1 (JW 91) and GND.
* 6.7 ± 0.05 V

1 LW OSC

1. -
2. 279 kHz <351 kHz> (preset 10 ch)
3. TP1 (JW 91) & T34
4. • Connect the Digital DC Voltmeter between TP1 and GND.
* 5.4 ± 0.05V <8.2 ± 0.05V>

5 IF LEVEL

1. 198 kHz, 74 dBμ
2. 198 kHz (preset 6 ch)
3. T35
4. • Connect the milli-voltmeter to LINE OUT.
* Maximum output level.

6 AM TUNING INDICATOR

1. 999 kHz, 55 dBμ
2. 999 kHz (preset 9 ch)
3. Tuning indicator on the FLD, VR3
4. * Tuning LED is lit.

V. SUPPLEMENTAL INFORMATION

TEST MODE FOR CD's OPERATION CHECK

There is no manual adjustment in the CD section on this model.

CD section adjustments are automatically carried out by the micro computer.

If the CD player section is defective and it is necessary to check the operation partially, "CD operation check" mode in the various TEST MODEs can be used while repairing.

To engage the "CD operation check" mode

While pressing and holding both the "MEMO" and "FREQUENCY ►" buttons, plug in the AC power cord to the AC outlet.

Note:

- During "CD operation check" mode, only the DISC 1 "▲" open/close button can be used for loading. Place a disc on TRAY 1 accordingly.
- Carry out testing by pressing the "DISC 1 ►" button once for each testing step.
- To disengage the test mode for "CD operation check", disconnect the AC power cord from the AC outlet.
- The testing step will return to "TEST-0" if the "▲" open/close button for disc 1 is pressed during steps "TEST-1" to "TEST-9".
- To continue checking after the step number has reached "TEST-9", open the tray once then repeat the procedure.
- The test result is displayed at the right side of the testing step number indication in the FL display. The result will be indicated as "OK" or "NG" (Not Good).

Testing step	Operation
TEST-0	Right after the "CD operation check" mode is engaged.
TEST-1	For checking the Laser beam projection.
TEST-2	For checking the memorization of the electrical tracking offset.
TEST-3	For checking the memorization of the electrical focus offset.
TEST-4	For checking the adjustment of the rough focus amp gain.
TEST-5	For checking the adjustment of the rough tracking amp gain.
TEST-6	For checking the adjustment of the tracking balance.
TEST-7	For checking the adjustment of the rough focus balance.
TEST-8	For checking the adjustment of the precise focus amp gain.
TEST-9	For checking the adjustment of the precise tracking amp gain.

VI. PARTS LIST

ATTENTION

1. When placing an order for parts, be sure to list the Part No., Model No. and the description of each part. Otherwise, the non-delivery of the part or the delivery of a wrong part may result.
2. Please make sure that Part No. is correct when ordering.
If not, a part different from the one you ordered may be delivered.
3. Since the parts shown in Parts List or Preliminary Service Manual may have been the subject of changes, please use this Parts List for all future reference.

HOW TO USE THIS PARTS LIST

1. This Parts List lists those parts which are considered necessary for repairs. Other common parts, such as resistors and capacitors, are listed in the "Common List for Service Parts" from which these parts should be selected and stocked.
2. The Recommended Spare Parts List shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not in principle be supplied.
4. How to read the Parts List.

a) Mechanism Block

2. HEAD BASE BLOCK

Ref. No.	Part. No.	Description
1	BH-T2023A320A	HEAD BASE BLOCK
2	HP-H2206A010A	HEAD R/P PR4-8FU C
3	ZS-477876	PAN20x03STL CMT
4	ZS-536488	BID20x08STL CMT
5	ZG-402895	SP CS ANGLE ADJUST

SP (Service Parts) Classification

This number corresponds with the individual parts index number in the figure.

b) PC Block

2. MAIN PC BOARD

Ref. No.	Part. No.	Description
IC1	EI-324536	IC HD14049BP
IC2	EI-336801	IC MB8841-564M
C1A	EC-338399	C MMY V 223M 250AC [U,E,B,S]
C1B	EC-350949	C MMY V 223M 250DC [J]
C1C	EC-338397	C MMY V 223M 125AC [C,A]
X1	EI-318384	OSC X'TAL NC-18C

Symbols for primary destination

[A]: AAL (U.S.A) [S]: SAA (Australia)
[B]: BEAB (England) [U]: U/T (Universal Area)
[C]: CSA (Canada)
[E]: CEE (Europe) [V]: VDE (Germany)
[J]: JPN (Japan) [Y]: Custom

SP (Service Parts) Classification

These reference symbols correspond with component symbols in the Schematic Diagrams.

The available PC Board Blocks are listed separately.

5. When Part No. is known, Parts Index at end of Parts List can be used to locate where that part is shown in Parts List by its Reference No. listed at right of Part No.

WARNING

Δ (*) INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS.

AVERTISSEMENT

Δ (*) IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.

1. RECOMMENDED SPARE PARTS

We suggest you to stock the following Recommended Spare Part items listed below since they can cover most of the routine service.

Ref. No.	Part No.	Description
1	* BB-408757N5	MECHATRAVERSE KSM-2101ABM
2	BM-733203M	MOTOR GEARASSY (MB)
3	BM-374198	MOTOR RF-370CA-15370
4	BM-408752M1	MOTOR RF-500TB-14415
5	* BO-394728J2	PICK UP KSS-210A
6	ED-418635J	D LED SEL6415E(C,D) GREEN
7	ED-307572	D SILICON H 1SS131
8	* ED-511907	D SILICON 1N4002 100/1.0A
9	ED-372893	D VARACTOR SVC321SPAA DBL
10	* ED-402202J	D ZENER H HZS11A1
11	* ED-418687J	D ZENER H HZS11A1LT26
12	* ED-396363J	D ZENER H HZS11B3
13	* ED-418676J	D ZENER H HZS11C2LT26
14	ED-402181J	D ZENER H HZS3A1
15	ED-397175J	D ZENER H HZS4A2
16	ED-367576	D ZENER H HZS5.6B2J
17	ED-402188J	D ZENER H HZS5A3
18	ED-389688J	D ZENER H HZS5B2
19	ED-397234J	D ZENER H HZS6A2
20	ED-408733J	D ZENER H HZS6A3L
21	ED-393759J	D ZENER H HZS6B1L
22	* ED-400171J	D ZENER H HZS6C2L
23	* ED-387783J	D ZENER H HZS6C3L
24	ED-425401J	D ZENER H HZS7A2L
25	EE-422289N	FRONT END FE340-A04 3 THROW [TC-590,TC-890[E]]
26	EE-415058J	FRONT END FE417-G04 [TC-890[V]]
27	EI-419336J	ICAN8389S
28	EI-419335J	ICAN8806SB
29	EI-419334J	IC BA6247
30	EI-387938J	IC HD74LS05P
31	EI-408673J	IC LA1851N
32	EI-416515J	IC LC7073M [TC-890]
33	EI-354951	IC LM7000N
34	EI-419340J	IC MN66271RAM-MC
35	EI-425470J	IC M38184MB-134FP RX1TUCD1
36	EI-400756J	IC NJM4558L-B
37	EI-408672J	IC S-80721AN
38	EI-415159J	IC SAA6579T [TC-890]
39	EI-405224J	IC ST24C02AB1/AAB
40	EI-332259	IC TC4052BP
41	EI-408674J	OSC CE CSB456F15 19.000KHZ
42	EI-382875J	OSC CE CST4.00MGW 4MHZ [TC-890]
43	EI-418663J	OSC CE CST6.30MGW-TF01 T05
44	EI-368825M	OSC X'TAL C-002RX 32.768KHZ
45	EI-381139N	OSC X'TAL HC-49/U 16934.400KHZ
46	EI-408814M	OSC X'TAL HC-49/U 7200KHZ
47	EI-416694M	OSC X'TAL HC-49/U-S 4.33200MHZ [TC-890]
48	EJ-394490J	SOCKET OPTICAL GP1F32T
49	EM-419263M	IND FL 12-BT-83GK CHARACTER
50	ES-733205M	SW LEAF
51	ES-408754M	SW LEAF LSA-1119H
52	ES-408755M	SW LEAF LSA-2127E
53	ES-362883	SW TACT SKHLM
54	ES-394427J	SW TACT SOR-133HS T05
55	ES-422074J	SW TACT SOR-143HS T05
56	ET-411995J	DETECTOR GP1U581X
57	ET-354370	TR DTA124ES
58	ET-354415	TR DTA144ES
59	ET-353897	TR DTC114ES
60	ET-354365	TR DTC114YS
61	ET-373485	TR DTC123JS
62	ET-375986	TR DTC124TS
63	ET-373391	TR DTC143ZS
64	ET-354414	TR DTC144ES

Ref. No.	Part No.	Description
65	ET-354094	TR DTC144WS
66	ET-349458	TR FET 2SK192AY
67	ET-337759	TR FET 2SK246 GR
68	ET-353899	TR 2SA1317 S,T,U
69	* ET-394495J	TR 2SA934 Q,R
70	ET-418637J	TR 2SC3000 E,F T05
71	ET-397160J	TR 2SC3330 R,S,T,U,V
72	ET-394735J	TR 2SC3792 T05
73	* ET-408842J	TR 2SD2394 E,F
74	* ET-416697J	TR 2SD2396 J,K
75	EX-425682J	THERMISTOR NTH5D222KA
76	MA-733202M	TURNTABLE CHASSIS ASSY (MB)

2. CD MECHANISM

Ref. No.	Part No.	Description
1	BM-408752M1	MOTOR RF-500TB-14415
2	MR-407764M	PULLEY (SG)
3	ES-408755M	SW LEAF LSA-2127E
4	ES-408754M	SW LEAF LSA-1119H
5	ZS-343082	PT BR26X08STL CMT
6	* BB-408757N5	MECHATRAVERSE KSM-2101ABM
7	MS-733198M	SLIDE SHAFT
8	ZG-733199M	SP COMPRESSION
9	MZ-733200M	CENTER RING (LO)
10	* BO-394728J2	PICK UP KSS-210A
11	MZ-733201M	GEAR (A)
12	MA-733202M	TURNTABLE CHASSIS ASSY (MB)
13	BM-733203M	MOTOR GEARASSY (MB)
14	EA-733204M	MOTOR P.C BOARD (6P)
15	ES-733205M	SW LEAF
16	EJ-733206M	CONNECTOR 6P
17	ZS-477876	PAN20X03STL CMT
18X	EW-408749M	WIRE ASSY YMC-02 PU1 8P
19X	EW-408750M	WIRE ASSY YMC-02 PU2 8P
20X	EW-408751M	WIRE ASSY YMC-02 TRAVERSE 6P
21-A	MB-407746M1	INSULATOR (SG)
21-B	MB-411992M1	INSULATOR(B) (SG)
22	MZ-407745M2	HOLDER TRAVERSE (SG)
23	ZW-418561M	PW21X100X100STL BZN (SG)
24	ZS-418560M	PT BID20X15STL BZN (SG)
25	ZS-407886J	BT PAN30X08STL BZN C100
26	BL-409250M	SG HOLDER GEAR PART
27	MZ-407734J1	GEAR LOADING(B)
28	MZ-407733M	GEAR LOADING(A) (SG)
29	MZ-407763J1	PULLEY GEAR
30	MB-407767M	BELT LOADING (SG)
31	MZ-410907J1	CLAMPER(B)
32	MZ-413089J	MAGNET FM30X17X5.24P
33	ML-407765J	LEVER SW LOADING
34	SC-407748M3	TRAY LOADING (SG)
35	BM-374198	MOTOR RF-370CA-15370
36	MZ-407740J	WORMTABLE
37	MZ-407739M	GEAR WORM WHEEL TABLE (SG)
38	MZ-407737M	GEAR TABLE(A) (SG)
39	MZ-407738M	GEAR TABLE(B) (SG)
40	ES-408758M	SW LEVER SSCTL-S-R
41	ZG-407741M	SP PLATE HOLDER DISK (SG)
42	ML-407742M2	LEVER SW (SG)
43	SZ-407750M	COVER GEAR (SG)
44	MZ-411049M	HOLDER DISK(B) (SG)
45	ZW-396336M	PW30X150X080STL CMT (SG)
46	ZS-394414J	BT BID30X08STL BZN
47	MR-407755M	ROLLER (SG)
48	MS-411215J	SHAFT WORM
49	ZS-390395J	BT BID20X10STL BZN
50	ZW-413013J	PW125X195X025PSL

NOTE :

Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

3. P.C. BOARD BLOCK

Ref. No.	Part No.	Description
1-A	BA-A6015T040E	ML PC TU-CD BLK TC-590(U)/ML [U] [TC-590]
1-B	BA-A6015T040A	ML PC TU-CD BLK TC-590(E)/ML [E,S] [TC-590]
1-C	BA-A6015T040D	ML PC TU-CD BLK TC-890(E)/ML [E] [TC-890]
1-D	BA-A6015T040G	ML PC TU-CD BLK TC-890(V)/ML [V] [TC-890]
2-A	BA-A6016T050B	ML PC#SYS890 BLK TC-590(U)/ML [U,S] [TC-590]
2-B	BA-A6016T050A	ML PC#SYS890 BLK TC-590(E)/ML [E] [TC-590]
2-C	BA-A6016T050C	ML PC#SYS890 BLK TC-890(E)/ML [E] [TC-890]
2-D	BA-A6016T050D	ML PC#SYS890 BLK TC-890(V)/ML [V] [TC-890]

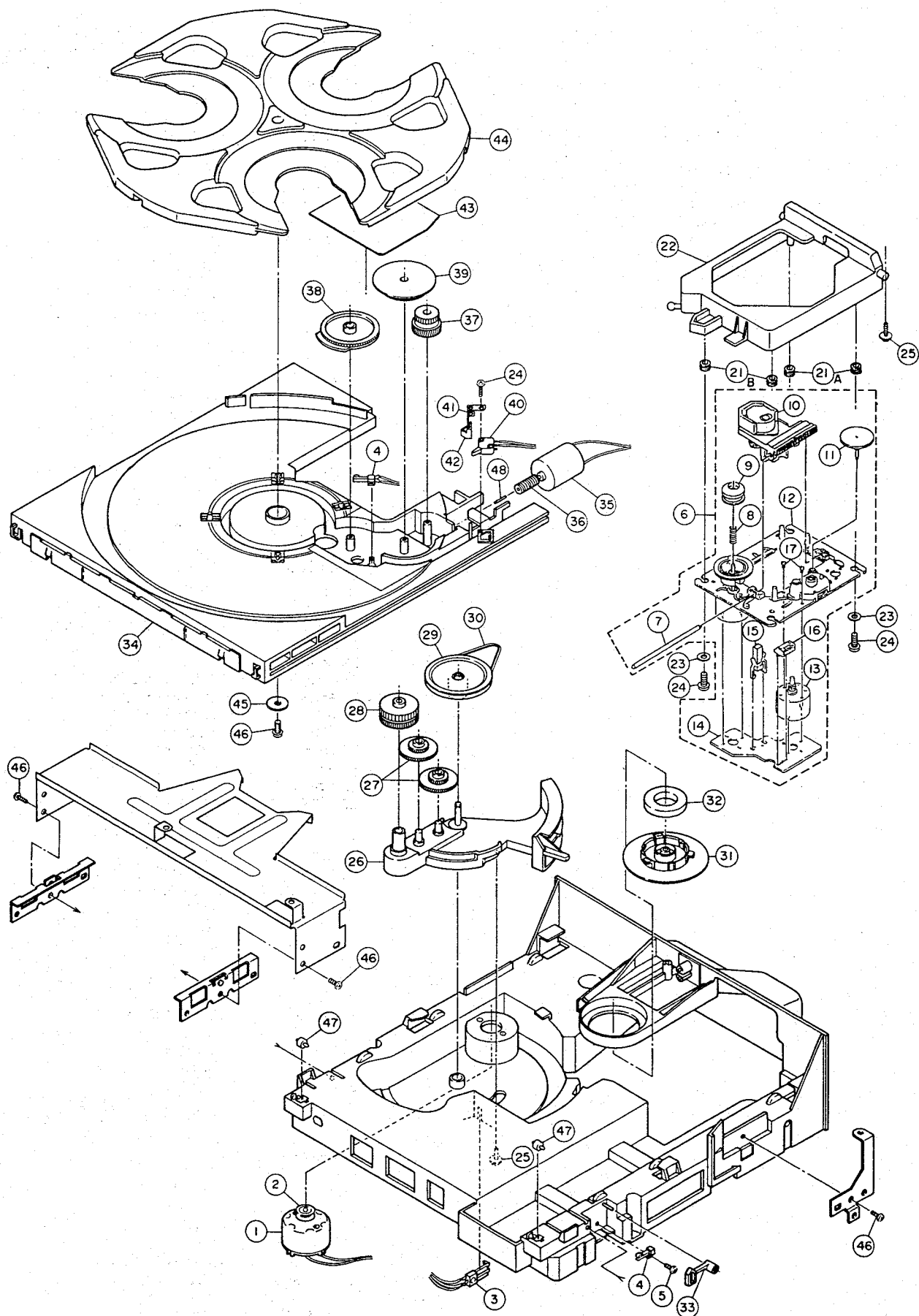
PC (#) SYS BLOCK CONSISTS OF FOLLOWING P.C. BOARDS.

- * SYSCON P.C. BOARD
- * OPERATION P.C. BOARD
- * DIGITAL OUT P.C. BOARD

4. TU-CD P.C. BOARD

Ref. No.	Part No.	Description
C300	EC-324662	C EC V CUT AS1 222M 25.0DC
C510	EC-422050J	C DBL LAYER EECS5R5V 105 5.5DC
D1	ED-307572	D SILICON H 1SS131
D31	ED-372893	D VARACTOR SVC321SPAA DBL
D32	ED-372893	D VARACTOR SVC321SPAA DBL
D33	ED-307572	D SILICON H 1SS131
D34	ED-307572	D SILICON H 1SS131
D61	ED-367576	D ZENER H HZS5.6B2J
D62	ED-307572	D SILICON H 1SS131
D63	ED-307572	D SILICON H 1SS131
D64	ED-307572	D SILICON H 1SS131
D66	ED-389688J	D ZENER H HZS5B2
D290	ED-425401J	D ZENER H HZS7A2L
D291	ED-402188J	D ZENER H HZS5A3
D292	ED-397175J	D ZENER H HZS4A2
D293	ED-402181J	D ZENER H HZS3A1
D294	ED-408733J	D ZENER H HZS6A3L
D300	* ED-511907	D SILICON 1N4002 100/1.0A
D301	* ED-511907	D SILICON 1N4002 100/1.0A
D302	* ED-511907	D SILICON 1N4002 100/1.0A
D303	* ED-511907	D SILICON 1N4002 100/1.0A
D304	* ED-418676J	D ZENER H HZS11C2LT26
D305	* ED-418687J	D ZENER H HZS11A1LT26
D306	* ED-387783J	D ZENER H HZS6C3L
D307	ED-393759J	D ZENER H HZS6B1L
D308	* ED-387783J	D ZENER H HZS6C3L
D309	ED-307572	D SILICON H 1SS131
D310	ED-307572	D SILICON H 1SS131
D311	* ED-396363J	D ZENER H HZS11B3
D312	ED-397234J	D ZENER H HZS6A2
D313	ED-307572	D SILICON H 1SS131
D314	* ED-402202J	D ZENER H HZS11A1
D315	* ED-400171J	D ZENER H HZS6C2L
D316	* ED-511907	D SILICON 1N4002 100/1.0A
D317	* ED-511907	D SILICON 1N4002 100/1.0A
D318	* ED-511907	D SILICON 1N4002 100/1.0A
D319	* ED-511907	D SILICON 1N4002 100/1.0A
D320	* ED-511907	D SILICON 1N4002 100/1.0A
D500	* ED-511907	D SILICON 1N4002 100/1.0A
D501	ED-307572	D SILICON H 1SS131
D502	ED-307572	D SILICON H 1SS131
D503	ED-307572	D SILICON H 1SS131
D504	ED-307572	D SILICON H 1SS131
D505	ED-307572	D SILICON H 1SS131
D506	ED-307572	D SILICON H 1SS131
D507	ED-307572	D SILICON H 1SS131
D508	ED-307572	D SILICON H 1SS131
D509	ED-307572	D SILICON H 1SS131
FE1-A	EE-422289N	FRONT END FE340-A04 3 THROW [TC-590,TC-890[E]]
FE1-B	EE-415058J	FRONT END FE417-G04 [TC-890[V]]
FL2-A	EH-394759J	FILTER CE SFE10.7MS2GK-A [TC-590,TC-890[E]]
FL2-B	EH-338338	FILTER CE SFE10.7MS3GK-A [TC-890[V]]
FL3-A	EH-394759J	FILTER CE SFE10.7MS2GK-A [TC-590,TC-890[E]]
FL3-B	EH-338338	FILTER CE SFE10.7MS3GK-A [TC-890[V]]
FL4	EH-405199J	FILTER LC LP K7-J1YD-0170 [TC-890[V]]
FL51	EH-408815J	FILTER LC LP 42B-5226-03
FL52	EH-408815J	FILTER LC LP 42B-5226-03
IC1	EI-408673J	IC LA1851N
IC61	EI-354951	IC LM7000N
IC93	EI-415159J	IC SAA6579T [TC-890]
IC94	EI-416515J	IC LC7073M [TC-890]
IC200	EI-419335J	IC AN8806SB
IC230	EI-419340J	IC MN66271RAM-MC
IC250	EI-419336J	IC AN8389S
IC270	EI-400756J	IC NJM4558L-B
IC290	EI-419334J	IC BA6247

CD MECHANISM



Ref. No.	Part No.	Description
IC400	EI-332259	IC TC4052BP
IC401	EI-400756J	IC NJM4558L-B
IC402	EI-400756J	IC NJM4558L-B
IC500	EI-408672J	IC S-80721AN
IC501	EI-387938J	IC HD74LS05P
J230	EJ-394490J	SOCKET OPTICAL GP1F32T
J300	EW-408676J	WIRE ASSY HFG07157601 L580 15P
L1	EO-357539	COIL FIX 1 EL0606RA T05 222K
R8	ER-422082N	R CB H S10FLR 25FJ 1/4W 223J
R290	ER-382474J	R OMF H S10 FS 1/2W 1R2J
R308	* ER-418750J	R OMF V T05FS ERG1SE 1W 330J
R309	* ER-418751J	R OMF V T05 FS ERX1SE 1W R62J
T1	EO-422336N	COIL DET1 292TEAS3741Z 10.7MHZ
T2	EO-416498J	COIL IFT K7-H5 10.7MHZ
T31	EO-416501M	COIL VARI 2 MRHNF-45669A
T32	EO-416502M	COIL VARI 2 MRZNF-45670A
T33	EO-363279	COIL OSC 2 A7NRS-9857X 150.0UH
T34	EO-352089	COIL OSC 2 7BRS-9098X 580.0UH
T35	EO-408687J	COIL IFT BCFAZ-024
TH250	EX-425682J	THERMISTOR NTH5D222KA
TM1	EJ-359031	TERMINAL LEVER YKD31-0215 P 2P
TR1	ET-418637J	TR 2SC3000 E,F T05
TR2	ET-397160J	TR 2SC3330 R,S,T,U,V
TR32	ET-394735J	TR 2SC3792 T05
TR33	ET-353897	TR DTC114ES
TR35	ET-349458	TR FET 2SK192A Y
TR61	ET-337759	TR FET 2SK246 GR
TR62	ET-397160J	TR 2SC3330 R,S,T,U,V
TR63	ET-354094	TR DTC144WS
TR64	ET-354094	TR DTC144WS
TR65	ET-354094	TR DTC144WS
TR66	ET-353899	TR 2SA1317 S,T,U
TR67	ET-353899	TR 2SA1317 S,T,U
TR200	ET-353899	TR 2SA1317 S,T,U
TR250	ET-375986	TR DTC124TS
TR251	ET-375986	TR DTC124TS
TR290	ET-354365	TR DTC114YS
TR291	ET-354365	TR DTC114YS
TR292	ET-354365	TR DTC114YS
TR293	ET-354365	TR DTC114YS
TR301	* ET-416697J	TR 2SD2396 J,K
TR302	ET-373391	TR DTC143ZS
TR303	* ET-408842J	TR 2SD2394 E,F
TR304	ET-397160J	TR 2SC3330 R,S,T,U,V
TR305	* ET-408842J	TR 2SD2394 E,F
TR306	ET-354414	TR DTC144ES
TR307	* ET-394495J	TR 2SA934 Q,R
TR308	* ET-408842J	TR 2SD2394 E,F
TR309	ET-354414	TR DTC144ES
TR310	* ET-408842J	TR 2SD2394 E,F
TR311	* ET-353899	TR 2SA1317 S,T,U
TR312	ET-354414	TR DTC144ES
TR400	ET-397160J	TR 2SC3330 R,S,T,U,V
TR401	ET-397160J	TR 2SC3330 R,S,T,U,V
TR402	ET-354415	TR DTA144ES
TR403	ET-354094	TR DTC144WS
TR500	ET-353897	TR DTC114ES
TR501	ET-354370	TR DTA124ES
TS500	ES-362883	SW TACT SKHLM
VC31	EC-337603	C S-FIX H VCT51F 5.5-30
VC32	EC-356284	C S-FIX H VCT51G 7.5-50
VR1	EV-389479J	R S-FIX H T05EVNDXAA03 0.1W223
VR2	EV-389476J	R S-FIX H T05EVNDXAA03 0.1W103
VR3	EV-389489J	R S-FIX H T05EVNDXAA03 0.1W472
X1	EI-408674J	OSC CE CSB456F15 19.000KHZ
X61	EI-408814M	OSC X'TAL HC-49/U 7200KHZ
X92	EI-416694M	OSC X'TAL HC-49/U-S 4.33200MHZ [TC-890]
X93	EI-382875J	OSC CE CST4.00MGW 4MHZ [TC-890]
X230	EI-381139N	OSC X'TAL HC-49/U 16934.400KHZ

5. SYSCON P.C. BOARD

Ref. No.	Part No.	Description
D1	ED-418635J	D LED SEL6415E(C,D) GREEN
D2	ED-418635J	D LED SEL6415E(C,D) GREEN
D3	ED-418635J	D LED SEL6415E(C,D) GREEN
IB1	EH-422066J	COMP R RGL6BT 473J
IB2	EH-422064J	COMP R RGL6BT 333J
IB3	EH-408821J	COMP R RGL612T 473J
IB4	EH-408821J	COMP R RGL612T 473J
IC1	EI-425470J	IC M38184M8-134FP RX1TUCD1
IC2	EI-405224J	IC ST24C02AB1/AAB
IN1	EM-419263M	IND FL 12-BT-83GK CHARACTER
PH1	ET-411995J	DETECTOR GP1U581X
R1	ER-365753	R MF H RK14 1/4W 226J
TR1	ET-373485	TR DTC123JS
TR2	ET-373485	TR DTC123JS
TR3	ET-373485	TR DTC123JS
TS1	ES-394427J	SW TACT SOR-133HS T05
TS2	ES-394427J	SW TACT SOR-133HS T05
TS3	ES-394427J	SW TACT SOR-133HS T05
TS4	ES-394427J	SW TACT SOR-133HS T05
TS5	ES-394427J	SW TACT SOR-133HS T05
TS6	ES-394427J	SW TACT SOR-133HS T05
TS7	ES-394427J	SW TACT SOR-133HS T05
TS8	ES-394427J	SW TACT SOR-133HS T05
TS9	ES-394427J	SW TACT SOR-133HS T05
TS10	ES-394427J	SW TACT SOR-133HS T05
TS11	ES-422074J	SW TACT SOR-143HS T05
TS12	ES-422074J	SW TACT SOR-143HS T05
TS13	ES-394427J	SW TACT SOR-133HS T05
TS14	ES-394427J	SW TACT SOR-133HS T05
TS15	ES-394427J	SW TACT SOR-133HS T05
TS16	ES-394427J	SW TACT SOR-133HS T05
TS17	ES-394427J	SW TACT SOR-133HS T05
X1	EI-418663J	OSC CE CST6.30MGW-TF01 T05
X2	EI-368825M	OSC X'TALC-002RX 32.768KHZ

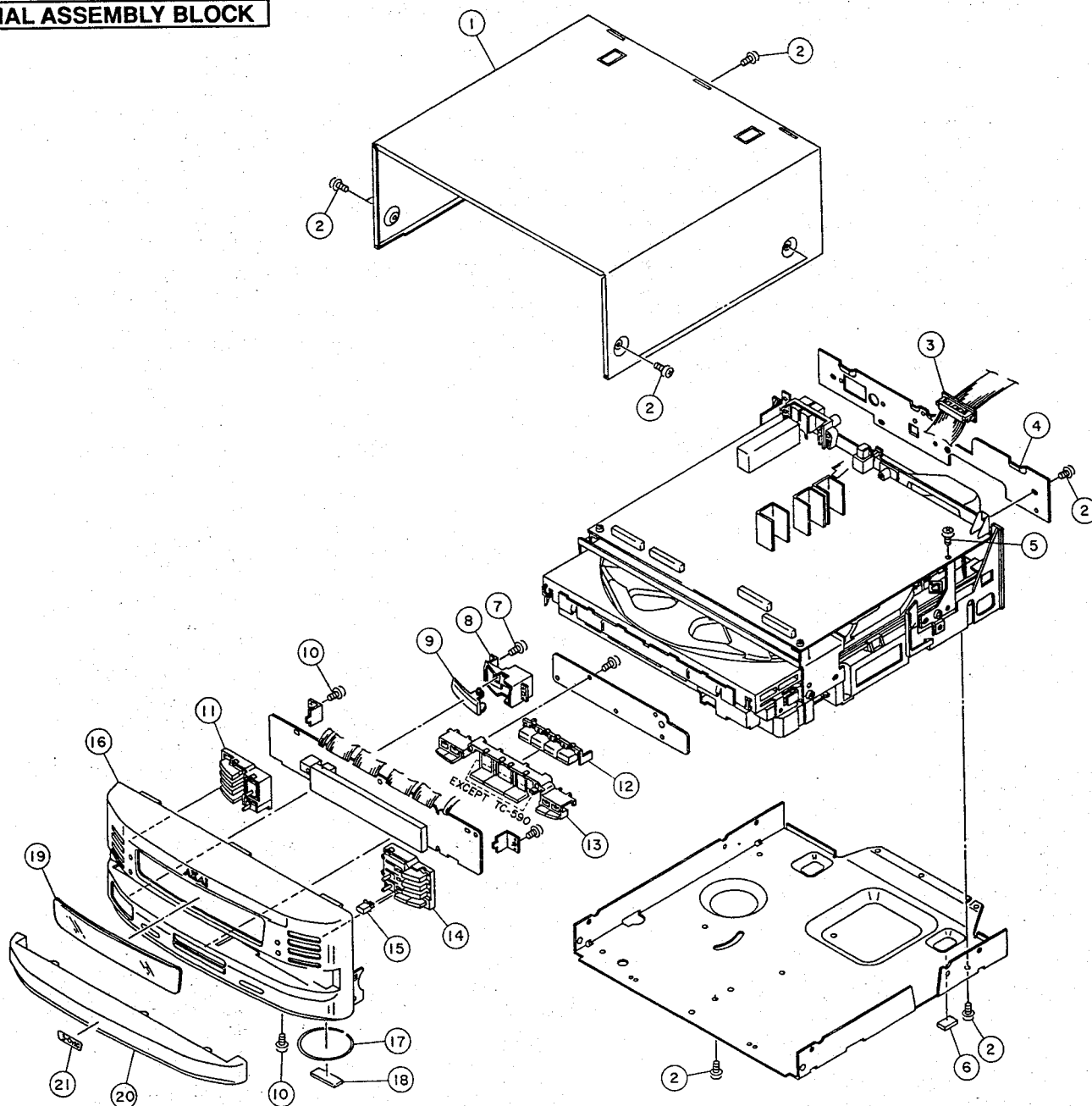
6. OPERATION P.C. BOARD

Ref. No.	Part No.	Description
TS100	ES-422074J	SW TACT SOR-143HS T05
TS101	ES-422074J	SW TACT SOR-143HS T05
TS102	ES-422074J	SW TACT SOR-143HS T05
TS103	ES-422074J	SW TACT SOR-143HS T05
TS104	ES-422074J	SW TACT SOR-143HS T05 [TC-890]
TS105	ES-422074J	SW TACT SOR-143HS T05 [TC-890]
TS106	ES-422074J	SW TACT SOR-143HS T05 [TC-890]
TS107	ES-422074J	SW TACT SOR-143HS T05
TS108	ES-422074J	SW TACT SOR-143HS T05
TS109	ES-422074J	SW TACT SOR-143HS T05
TS110	ES-422074J	SW TACT SOR-143HS T05

7. DIGITAL OUT P.C. BOARD

Ref. No.	Part No.	Description
J200	EJ-394490J	SOCKET OPTICAL GP1F32T

FINAL ASSEMBLY BLOCK



8. FINAL ASSEMBLY BLOCK

Ref. No.	Part No.	Description
1	SP-420669M	COVER UPPER (SG)
2	ZS-394412J	BT BID30X08STL BZN PROJECTION
3	SZ-407909M	WIRE HOLDER (SG)
4	SP-420670M	PANEL REAR (SG)
5	ZS-331181	BT BID30X08STL NI3
6	SA-407840M	CUSHION FOOT REAR (SG)
7	ZS-393515J	BT BID30X10STL BZN
8	SZ-419958M	HOLDER DOOR (SG)
9	SP-419945M	DOOR (SG)
10	ZS-394414J	BT BID30X08STL BZN
11	SB-420667M	BUTTON TIMER(2) (SG)
12	SB-420649M	BUTTON TUNING(B) (SG)
13-A	SB-419919M	BUTTON FUNCTION TC(2) (SG)
		[590]
13-B	SB-419918M	BUTTON FUNCTION TC(1) (SG)
		[890]
14	SB-420665M	BUTTON DISC (SG)
15	SE-420666M	LENS DISC (SG)
16-A	SP-421783M	PANEL FRONT TC-590 (SG)

Ref. No.	Part No.	Description
16-B	SP-420664M	PANEL FRONT TC-890 (SG)
17	SZ-419923M	RING FOOT(1) (SG)
18	SA-394136M	CUSHION FOOT (SG)
19	SE-420668M	WINDOW FLD-TC(2) (SG)
20	SP-419943M	COVER TRAY (SG)
21	SM-419941J	NAME PLATE 3D(2)

NOTE :

Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

9. ACCESSORY

Ref. No.	Part No.	Description
1	AX-415039M	ANT LOOP WAU0990-0172M
2	EE-396107M	ANT WIRE FMA3063
3	EJ-394417J	SOCKET COAX HXC 0526-01-010

INDEX

Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.
AX415039M	9-1	EE415058J	4-FE1-B	ES394427J	5-TS17	MB411992M1	2-21-B
BAA6015T040A	3-1-B	EE422289N	4-FE1-A	ES408754M	2-4	ML407742M2	2-42
BAA6015T040D	3-1-C	EH338338	4-FL2-B	ES408755M	2-3	ML407765J	2-33
BAA6015T040E	3-1-A	EH338338	4-FL3-B	ES408758M	2-40	MR407755M	2-47
BAA6015T040G	3-1-D	EH394759J	4-FL2-A	ES422074J	5-TS11	MR407764M	2-2
BAA6016T050A	3-2-B	EH394759J	4-FL3-A	ES422074J	5-TS12	MS411215J	2-48
BAA6016T050B	3-2-A	EH405199J	4-FL4	ES422074J	6-TS100	MS733198M	2-7
BAA6016T050C	3-2-C	EH408815J	4-FL51	ES422074J	6-TS101	MZ407733M	2-28
BAA6016T050D	3-2-D	EH408815J	4-FL52	ES422074J	6-TS102	MZ407734J1	2-27
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BM408752M1	2-1	EH422066J	5-IB1	ES422074J	6-TS106	MZ407740J	2-36
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ED307572	4-D62	EI408672J	4-IC500	ET353899	4-TR67	SB419919M	8-13-A
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ED418687J	4-D305	ES394427J	5-TS2	ET416697J	4-TR301		
ED425401J	4-D290	ES394427J	5-TS3	ET418637J	4-TR1		
ED511907	4-D300	ES394427J	5-TS4	EV389476J	4-VR2		
ED511907	4-D301	ES394427J	5-TS5	EV389479J	4-VR1		
ED511907	4-D302	ES394427J	5-TS6	EV389489J	4-VR3		
ED511907	4-D303	ES394427J	5-TS7	EW408676J	4-J300		
ED511907	4-D316	ES394427J	5-TS8	EW408749M	2-18X		
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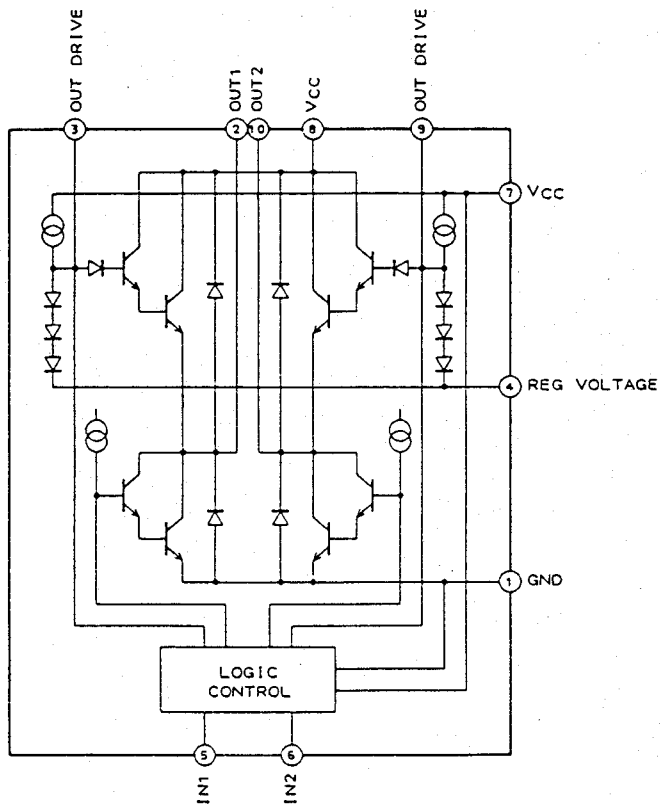
ABBREVIATIONS (COMPACT DISC)

ABBREVIATION	EXPLANATION	ABBREVIATION	EXPLANATION
A-D	Analog to Digital (Convertor)	Mb	Mega Bits
ADC	Analog to Digital (Convertor)	MDA	Mortor Drive Amplifier
BCD	Binary Code Decimal	MFM	Modified Frequency Modulation
BPI	Bits per Inch	MM	Mono-stable Multivibrator
CD	Compact Disc	M ² FM	Modified Modified Frequency Modulation
CIRC	Cross Interleaving & Reed Solomon Coding	MOD2	Modulo 2 (Addition)
CLV	Constant Linear Velocity	MP	Microprocessor
CP	Clock Pulses	MSB	Most Significant Bit
CRCC	Cyclic Redundancy Check Codes	NA	Numerical Aperture
D Level	Decision Level	NRZ	Non Return to Zero
D-A	Digital to Analog (Convertor)	NRZ-1	Non Return to Zero Inverted
DAC	Digital to Analog (Convertor)	P	Parity Data
DAD	Digital Audio Disc	PAM	Pulse Amplitude Modulation
DEM	Dynamic Element Matching	PCM	Pulse Code Modulation
DPD	Differential Phase Detection	PD	Phase Detector
DSV	Digital Sum Value	PE	Phase Encode
EFM	Eight to fourteen Modulation	PLL	Phase Locked Loop
EX-OR	EXclusive OR	PNM	Pulse Number Modulation
FCI	Flux Changes per Inch	PPM	Pulse Phase Modulation
FIR	Finite Impulse Response	PWM	Pulse Width Modulation
FP	Front Pulse	Q	Parity Data
FPG	Front Pulse Gate	R, R ₁ , R ₂ , etc.	Data for Right Channel
f	Frequency of Sampling	RAM	Random Access Memory
GF	Galois Field	RPG	Rear Pulse Gate
H & V (Parity)	Horizontal & Vertical	SCOOP	Self Coupled Optical Pick-up
IIR	Infinite Impulse Response	S & H	Sample & Hold
kb	Kilo Bits	S/N	Signal to Noise Ratio
L, L ₁ , L ₂ , etc.	Data for Left Channel	SSG	Standard Signal Generator
LPF	Low Pass Filter	SYSCON	SYStem CONtrol
LSB	Least Significant Bit		

ABBREVIATIONS (TUNER)

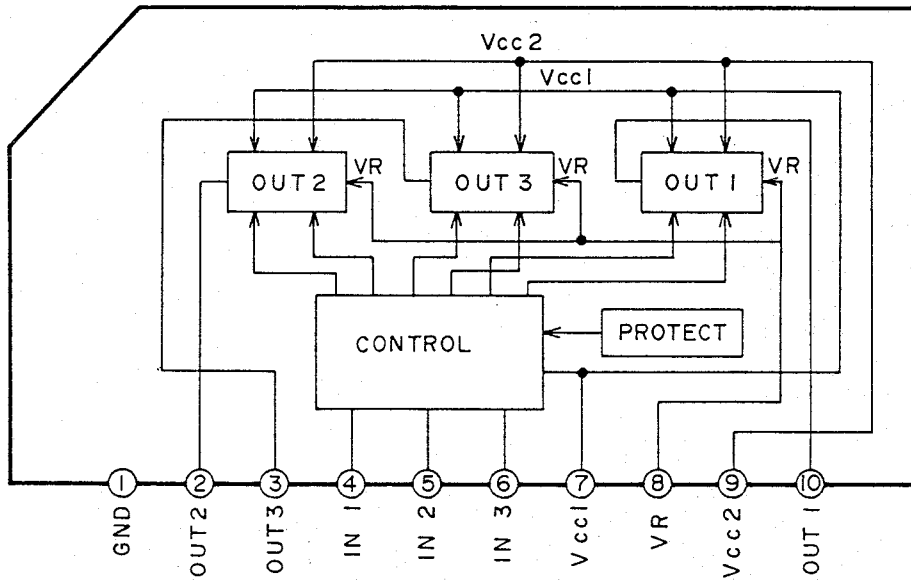
ABBREVIATION	EXPLANATION	ABBREVIATION	EXPLANATION
AFC	Auto Frequency Control	MEMO	MEMOry
AGC	Auto Gain Control	MI-COM	Micro-COMputer
ALC	Auto Level Control	MIN	MINimum
AM	Amplitude Modulation	MIX	MIXing
AMP	AMPlifier	MPX	Multi plex
ANT	ANTenna	MW	Medium Wave (frequency)
BATT	BATTery	NC	No Connection
BLK	BLock	NFB	Negative Feed Back
BUFF	BUFFer	OSC	OSCillator
COMP	COMPalator	PCB	Printed Circuit Board
DET	DETECT (DEtector)	PLL	Phase Locked Loop
FLD	FLuorescent Display	Q.D	Quadrature Detector
FM	FREquency Modulation	Rch	Right channel
FREQ	FREquency	REF	REFerence
GND	GrouND	REG	REGulator
H	Hight	RF	Radio Frequency
HPF	Hight Pass Filter	SEG	SEGment
IF	Intermediate Frequency	SELE	SELEctor
IHF	Institut of High Fidelity	SENS	SENSitivity
IND	INDicator	SIG	SIGnal
I/O	In/Out	S/N	Signal to Noise Ratio
JW	Jumper Wire	SSG	Standard Signal Generator
L	Low	STD	STanDard
LCD	Liquid Crystal Display	SW	SWitch: Short Wave (frequency)
Lch	Left channel	THD	Total Harmonic Distortion
LED	Light Emiting Diode	TP	Test Point
LPF	Low Pass Filter	VCO	Voltage Controlled Cscillator
LW	Long Wave (Frequency)	VR	Variable Resistor
		XTAL	Crystal

BA6229 (BI-DIRECTIONAL MOTOR DRIVE)



INPUT		OUTPUT		MODE
⑤	⑥	②	⑩	
H	H	L	L	BRAKE
L	H	L	H	CASSETTE & TAPE LOADING
H	L	H	L	CASSETTE & TAPE UNLOADING
L	L	OPEN	OPEN	STOP

BA6247 (REVERSIBLE MOTOR DRIVE)



IN PUT			OUT PUT		
IN1	IN2	IN3	OUT1	OUT2	OUT3
L	L	L	L	L	L
		H			
H	L	L	H	L	OPEN
H	L	H	L	H	OPEN
L	H	L	H	OPEN	L
L	H	H	L	OPEN	H
H	H	L	L	L	L
		H			

M38184M8 (AX-890 SYSTEM CONTROL MI-COM)

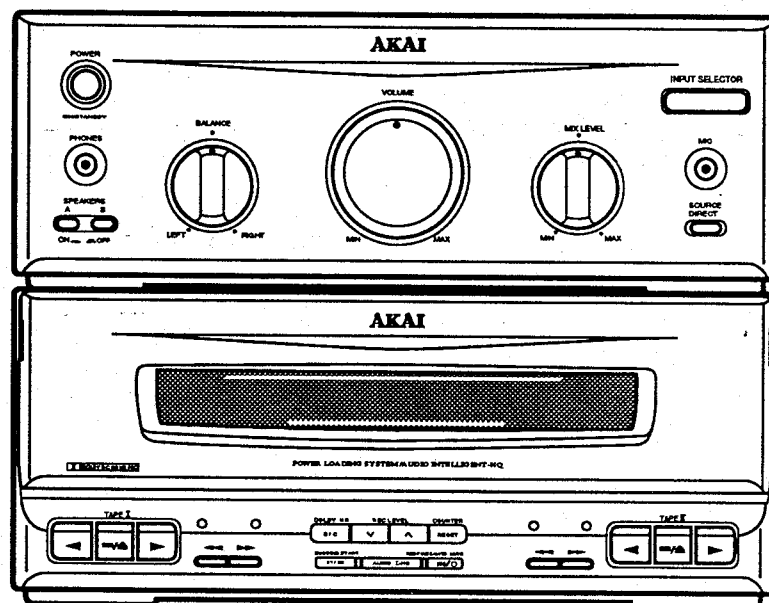
Pin No.	PORT NAME	I/O	FUNCTION
1,86-88, 97-100	—	—	To be grounded
2,6,19, 64-66	—	—	Not used
3	EA BUSY	O	Reset signal output to G.EQ MI-COM
4	EA CLK	O	Clock output to G.EQ MI-COM
5	EA DATA OUT	O	Data output to G.EQ MI-COM
7	TC BUSY	O	Output for bus request to CD/tuner block
8	TC CLK	I	Bus clock input from CD/tuner block
9	TC DATA OUT	O	Bus serial data output to CD/tuner block
10	TC DATA IN	I	Bus serial data input from CD/tuner block
11	MIC OUTPUT	O	Input switch control for mic signal (MIC ON : H)
12	INPUT SW A	I	Input switch control signal A
13	INPUT SW B	I	Input switch control signal B
14	OUTPUT SW A	O	Output switch control signal A
15	OUTPUT SW B	O	Output switch control signal B
16	OUTPUT SW C	O	Output switch control signal C
17	MIC INPUT	I	Input from microphone jack's switch
18	EEPROM DATA	I/O	EEP ROM serial data IN/OUT
20	SOURCE DIRECT LED	O	SOURCE DIRECT LED control output
21	SOURCE DIRECT KEY	I	SOURCE DIRECT command input
22	VR DOWN	O	Main VR control (DOWN) output
23	VR UP	O	Main VR control (UP) output
24	AMP MUTE	O	Pre AMP mute control output (H : mute)
25	EEP ROM CLK	O	Serial clock output to EEP-ROM
26	VR LED	O	Main VR LED control output
27	TEST TONE 400Hz	O	400 Hz test signal output for I-HQ calibration
28	TEST TONE 10 kHz	O	10 kHz test signal output for I-HQ calibration
29	INPUT SELECT KEY	I	Input select switch (CD → TUNER → TAPE1 → TAPE2 → PHONO → LINE)
30	POWER ON/OFF KEY	I	Power switch key input
31	POWER ON/OFF	O	Power ON/OFF control output (H : power off)
32	INPUT MUTE	O	REC input mute control (L : mute)
33	POWER MUTE	O	Power AMP mute control output (H : mute on)
34	PROTECT	I	Input for detection of PROTECT operation
35	RESET	I	Reset signal input (L : reset)
36	XCIN	I	Not used
37	XCOUT	O	
38	XOUT	O	
39	XIN	I	X'tal connecting pin
41	PB MUTE	O	Playback mute control output (H : mute)
42	FL SCK	O	Serial clock output to FLD MI-COM
43	2METAL	I	Tape 2 metal tape detect switch input
44	2 AR.R	I	Tape 2 reverse recording inhibit input
45	2 120/70	I	Tape 2 120 μ s/70 μ s tape detect input (L : 120 μ s)
46	2 PLAY	I	Tape 2 head position detect input
47	2 PACK	I	Tape 2 pack detect input
48	2 AR.F	I	Tape 2 forward recodding inhibit input
49	1 PACK	I	Tape 1 pack detect input
50	1 120/70	I	Tape 1 120 μ s/70 μ s tape detect input (L : 120 μ s)
51	1 PLAY	I	Tape 1 head position detect input
52	2 PULSE	I	Tape 2 reel pulse input
53	1 PULSE	I	Tape 1 reel pulse input
54	CLK (DOLBY)	O	Serial clock out to DOLBY IC
55	REC/PB	O	Head REC/PB control output (H : PB)
56	PL COM	O	Plunger ON/OFF (common) control output (L : active)
57	1 PL	O	Tape 1 plunger ON/OFF control output (H : active)
58	1 CAP x1/x2	O	Tape 1 capstan motor x1/x2 speed switching output (H : x1, L : x2)

(DATA/SERVO PROCESSOR)

PORT NAME	I/O	FUNCTION
BCLK	O	Bit clock output for SR DATA
LRCK	O	L/R identify signal output
SRDATA	O	Serial data output
DVDD1	I	Power supply for digital circuit
DVSS1	-	Ground for digital circuit
TX	O	Digital audio interface output signal
MCLK	I	MI-COM command clock signal input
MDATA	I	MI-COM command data input
MLD	I	MI-COM command load signal input (L : load)
SENSE	O	Sense signal output
FLOCK	O	Focus servo lock signal output (L : locked)
TLOCK	O	Tracking servo lock signal (L : locked)
BLKCK	O	Subcode block clock signal output
SQCK	I	External clock input for subcode resistor
SUBQ	O	Subcode Q code output
DMUTE	I	Muting input (H : mute)
STAT	O	Status signal output
RST	I	Reset input(L:reset)
SMCK	O	Clock signal output MSEL = H : 8.4672 MHz, MSEL = L : 4.2336 MHz
PMCK	O	88.2KHz clock signal output
TRV	O	Traverse(sled motor) forced delivery output
TVD	O	Traverse(sled motor) drive output
PC	O	Spindle motor on/off control (L : on)
PCM	O	Spindle motor drive signal output (forced mode output)
PCS	O	Spindle motor drive signal output (servo error signal output)
ICK	O	Kick pulse output
RD	O	Tracking drive output
OD	O	Focus drive output
REF	I	Reference voltage for DA output section
BAL	O	Focus balance adjustment output
BAL	O	Tracking balance adjustment output
	I	Focus error signal input (analog)
	I	Tracking error signal input (analog)
FNV	I	RF envel ope signal input (analog)
ET	I	Vibration detect signal input (H : detect)
T	I	Off track signal input (H : off track)
CRS	I	Track cross signal input
DET	I	RF detection signal input (L : detect)
O	I	Dropout signal input (H : drop out)
ON	O	Laser on/off control output
	O	Tracking error shunt signal output (H : shunt)
/	O	Play signal output (H : play)
L	O	Double speed status signal output
	I	RF signal input
	I	Reference current input pin
	I	Bias pin for DSL
	I/O	Loop filter pin for DSL
	I/O	Loop filter pin for PLL
	I/O	Loop filter pin for VCO
2	I	Power supply for analog circuit
2	-	Ground for analog circuit
	O	EFM signal output
	O	PLL extraction clock output
	O	Phase comparison output between EFM signal and PCK signal
	O	Sub code serial data output
	O	Clock input for sub code serial output
	-	Ground for OSC circuit

M38184M8 (AX-890 SYSTEM CONTROL MI-COM)

Pin No.	PORT NAME	I/O	FUNCTION
59	2 CAP $x1/\overline{x2}$	O	Tape 2 capstan motor $x1/x2$ speed switching output (H : $x1$, L : $x2$)
60	CAP ON/OFF	O	Capstan motor ON/OFF control output (L : on)
61	RESET(DOLBY)	O	DOLBY IC reset output
62	STB(DOLBY)	O	Strobe pulse output to DOLBY IC
63	DATA(DOLBY)	O	Serial data output to DOLBY IC
65	DOLBY ON/OFF	O	DOLBY ON/OFF control output (L : off)
67	2 PL	O	Tape 2 plunger ON/OFF control output (H : active)
68	$x2$ PB 70 μ s	O	$x1/x2$ speed playback EQ switching output (H : $x2$ 70 μ s)
69	$x1$ PB 70 μ s	O	$x1/x2$ speed playback EQ switching output (H : $x1$ 70 μ s or $x2$ 120 μ s)
70	$x2$ PB PEAK	O	$x1/x2$ PB peaking frequency select (H : $x1$)
71	CrO ₂	O	For erasing OSC level control
72	NORMAL	O	
73	OSC ON/OFF	O	Erasing OSC control output (H : OSC ON)
74	FL ON/OFF	O	Output for turning the FLD filament power ON/OFF control
75	FL NCS	O	Output to FLD MI-COM control
76	FL SDI	I	Key input from FLD MI-COM
77	FL SDO	O	Serial data out to FLD MI-COM
78	2 CLOSE SW	I	Input to detect tape 2 cassette holder close position (H : close)
79	2 OPEN SW	I	Input to detect tape 2 cassette holder open position (H : open)
80	2 REV MOTOR	O	Tape 2 EJECT motor direction control (reverse)
81	2 FWD MOTOR	O	Tape 2 EJECT motor direction control (forward)
82	1 CLOSE SW	I	Input to detect tape 1 cassette holder close position (H : close)
83	1 OPEN SW	I	Input to detect tape 1 cassette holder open position (H : open)
84	1 REV MOTOR	O	Tape 1 EJECT motor direction control (reverse)
85	1 FWD MOTOR	O	Tape 1 EJECT motor direction control (forward)
89	VEE	-	To be grounded
90	PB1	-	
91	VCC	-	Connect to +5 V power supply
94	VREF	-	
95	METER R (A/D)	I	Input for carrying out level meter detection
96	METER L (A/D)	I	



STEREO DECK AMPLIFIER

MODEL AX-890

SPECIFICATIONS

[Amplifier section]		Frequency response	
Power output	76 W + 76 W (6 ohms, 10 % THD, EIAJ) 60 W + 60 W (6 ohms, 1 % THD, DIN) 53 W + 53 W (8 ohms, 1 % THD, DIN) 52 W + 52 W (6 ohms, 0.5 % THD, 60 Hz ~ 20 kHz, FTC)	Normal	30 Hz to 15 kHz $\pm$ 3 dB
Frequency response	10 Hz to 100 kHz (10 Hz : -4 dB, 100 kHz : -3 dB)	CrO ₂	30 Hz to 16 kHz $\pm$ 3 dB
Required speaker impedance	6 to 16 ohms (A or B) 12 to 16 ohms (A + B)	Metal	30 Hz to 18 kHz $\pm$ 3 dB
Input Sensitivity		S/N ratio	
PHONO	3.2 mV / 47 k ohms	Dolby C	73 dB (1 kHz to 10 kHz)
LINE	220 mV / 22 k ohms	Dolby B	63 dB (5 kHz)
Line output level	220 mV / 1 k ohms	Dolby off	53 dB (CrO ₂ tape)
S/N ratio		Total harmonic distortion	Less than 0.5 % (normal tape, at 315 Hz)
PHONO	70 dB (A-weight)	Channel separation	43 dB (normal tape)
Except PHONO	90 dB (A-weight)		
Residual noise	0.08 mV (A-weight)	[General]	
Channel separation	70 dB	Power requirements	AC 220 V to 230 V, 50Hz for Europe except U.K. AC 110 / 127 / 220 to 230 / 240 V, 50 / 60 Hz convertible for other countries
[DECK section]		Power consumption	150 W (nominal 120 W)(with TC-590/890 & EA-890) 130 W (nominal 106 W)
Track system	4 track 2 channel system	Dimensions	270 (W) x 209 (H) x 315 (D) mm
Wow & Flutter	0.09 % (WRMS), 0.15 % (DIN)	Weight	8.3 kg
		Standard accessories	
		Remote control unit	x 1
		Batteries	x 2
		Operator's manual	x 1

- * For improvement purposes, specifications and design are subject to change without notice.
- * Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX-Pro originated by Bang & Olufsen.
- * The "DOLBY" and double-D symbol  and "HX-Pro" are trademarks of Dolby Licensing Corporation.

I. DISASSEMBLY

In case of trouble etc., necessitating dismantling, please dismantle in the order shown in the illustrations. Reassemble in the reverse order.

※ If the CASSETTE MECHA. BLOCK removal is intended, press both the "EJECT" buttons on the FRONT PANEL to open the cassette holders and cassette door before proceeding.

1-1. Removal of the UPPER COVER

- 1) Remove the four screws on the sides and seven screws on the back.

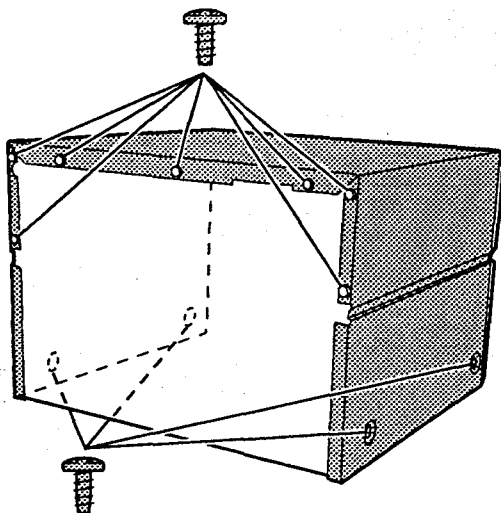


Fig. 1-1

1-2. Removal of the FRONT PANEL BLOCK

- 1) Remove the five screws on the bottom.

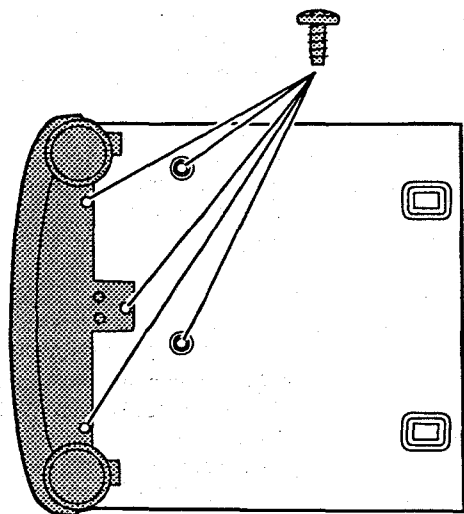


Fig. 1-2

- 2) Remove the four screws on both sides.

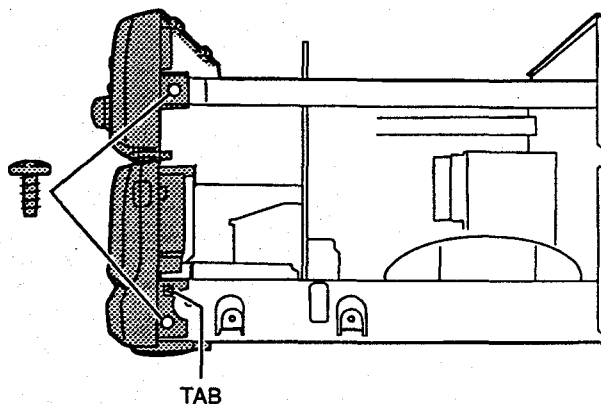


Fig. 1-3

- 3) Disconnect the flat cables from the J3, J4 and J5 connectors and the shield wires from the J7 and J8 connectors on the INPUT PCB.

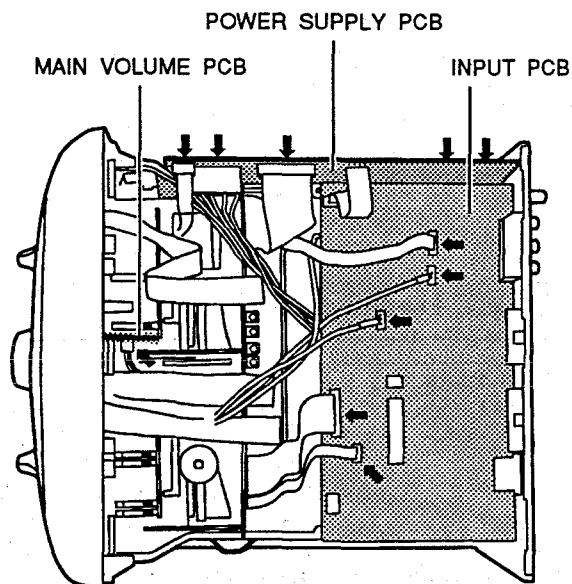


Fig. 1-4

- 4) Disconnect the flat cables from the J10 and J15 connectors on the POWER SUPPLY PCB and also disconnect the P11 and P12 connectors at the lower side of the POWER SUPPLY PCB.
- 5) Disconnect the P13 connector on the MAIN VOLUME PCB.
- 6) Disconnect the P5 connector and remove the two screws on the POWER SUPPLY PCB. Next, release the hooks on both sides of the FRONT PANEL, then pull the FRONT PANEL BLOCK out with care. When pulling the FRONT PANEL BLOCK out, press the POWER SUPPLY PCB to the left to avoid the fuses touching the DECK PCB.

1-3. Removal of the CASSETTE MECHA. BLOCK

1-3-1. Removal of the DECK PCB

- 1) Disconnect the flat cables from the J601 and J602 connectors while pushing the stoppers of the connectors down.

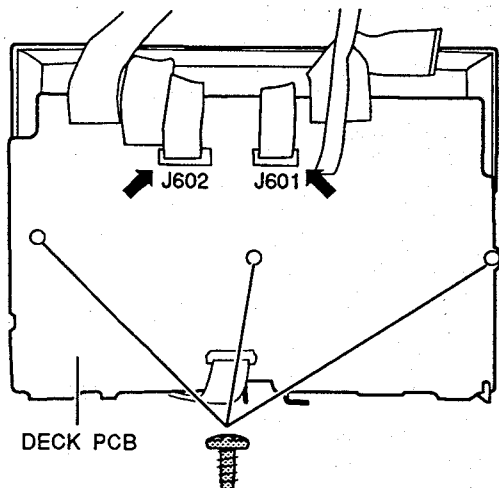


Fig. 1-5

- 2) Disconnect the flat cables from the J17 and J22 connectors by pulling the stoppers of the connectors up.
- 3) Disconnect the P1, P101, P601 and P602 connectors and remove the three screws on the DECK PCB, then remove the DECK PCB.

1-3-2. Removal of the MECHA. BLOCK

- 1) Unhook the door spring on the TAPE-I MECHA. BLOCK.

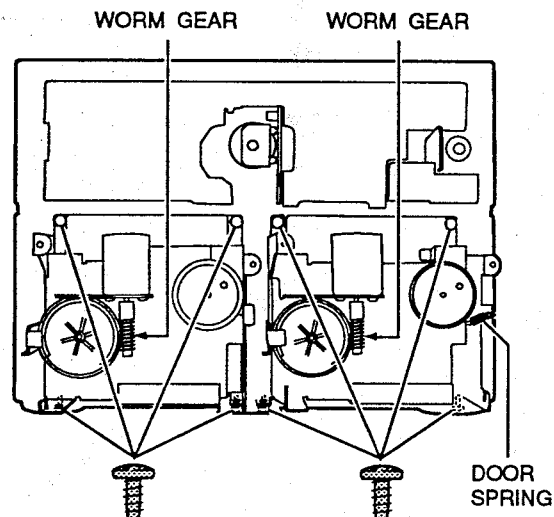


Fig. 1-6

- 2) Remove the four screws for each of the TAPE-I and TAPE-II MECHA. BLOCKs then remove the BLOCKs carefully. If the cassette holder is closed, turn the loading motor's WORM GEAR to open it and then remove the MECHA. BLOCK.

II. PRINCIPAL PARTS LOCATION

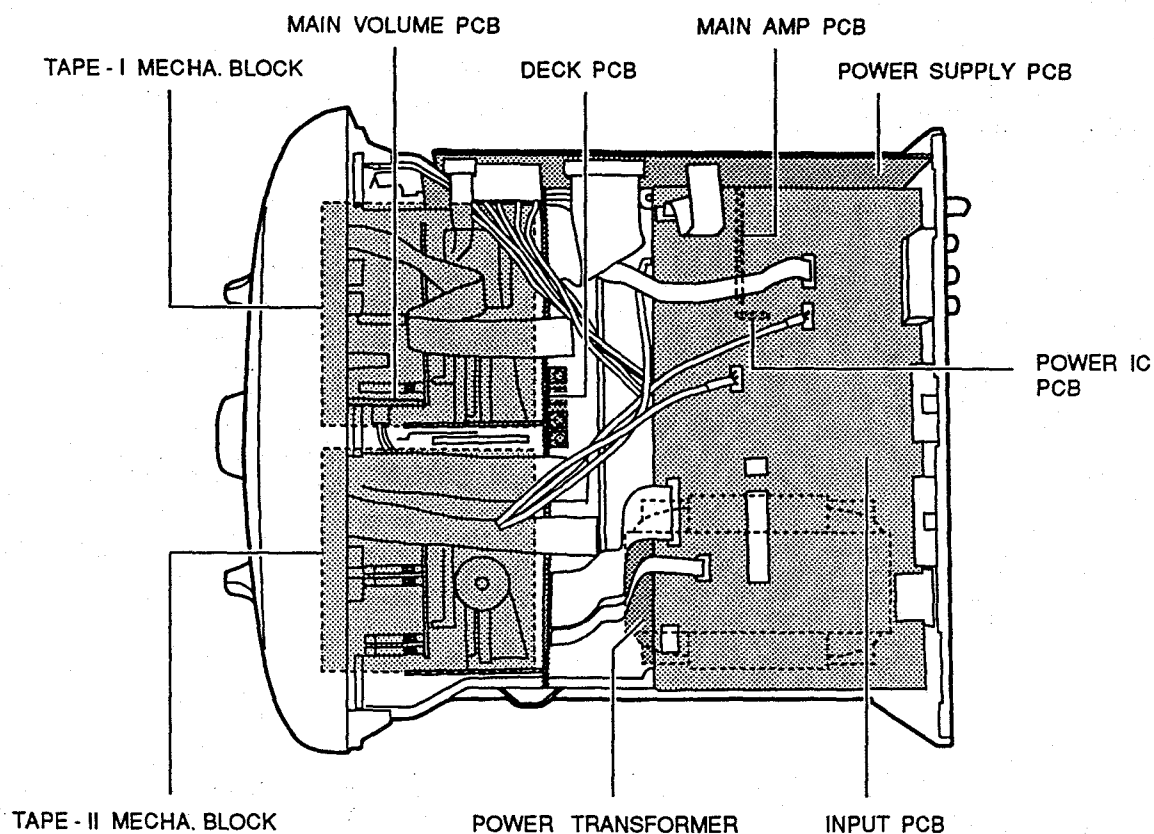


Fig. 2-1 Top view

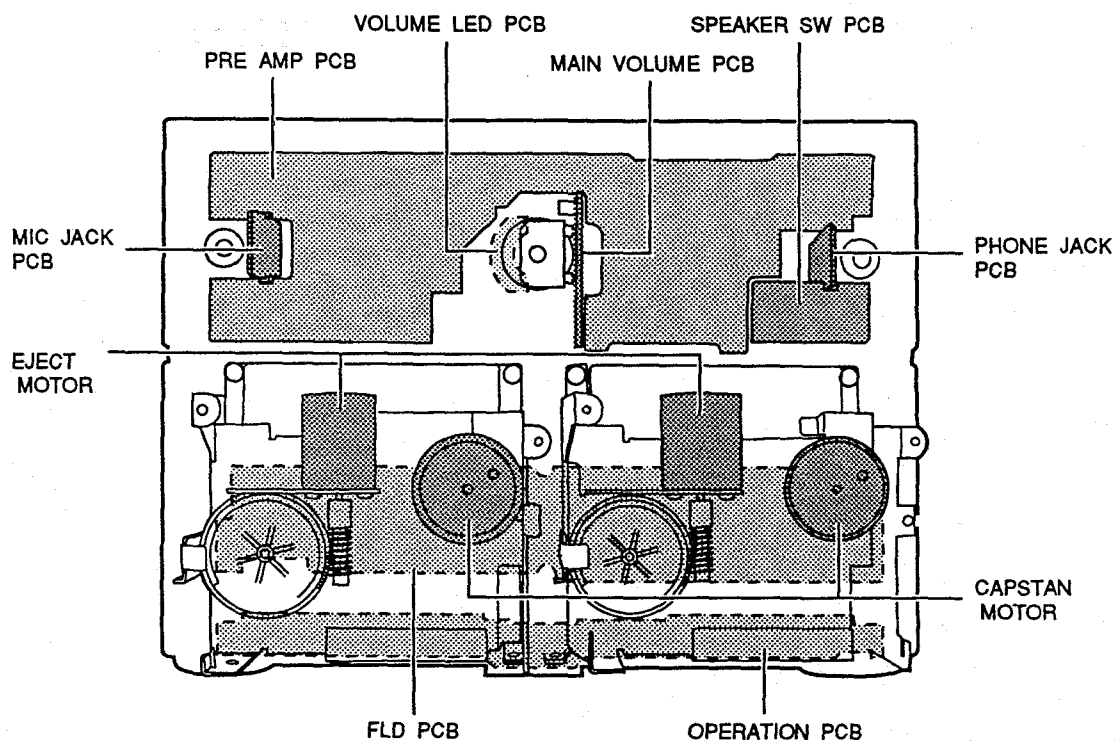


Fig. 2-2 Front panel

III. REPLACEMENT OF PRINCIPAL MECHANICAL PARTS

3-1. REPLACEMENT OF THE FR BELT and MAIN BELT

- 1) Remove the two (A) screws then remove the HEAD SHIELD PLATE.

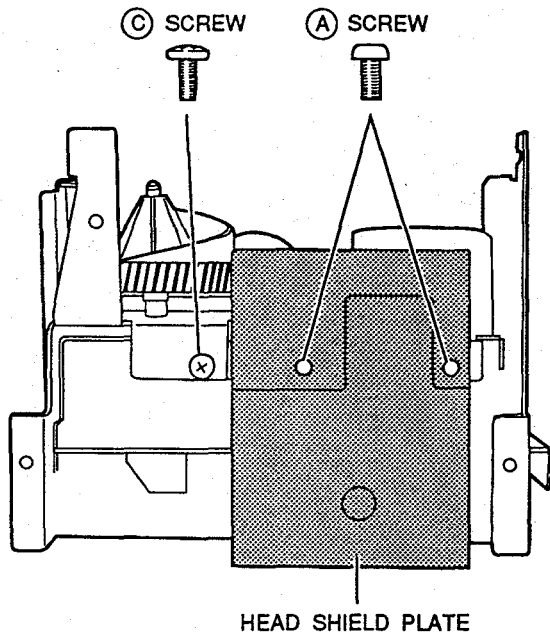


Fig. 3-1

- 2) Remove the (B) graduated screw and remove the EJECT ARM and the EJECT TORSION SPRING. Next, remove the CASSETTE HOLDER.

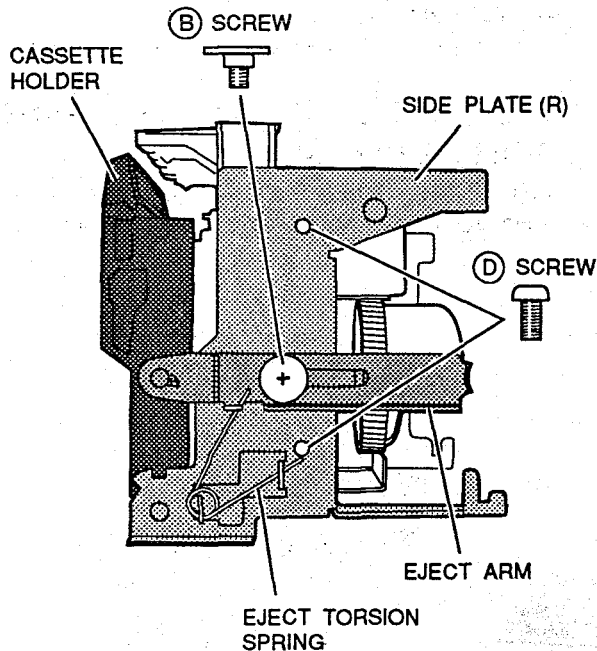


Fig. 3-2

- 3) Remove the (C) and (D) screws and remove the SIDE PLATE (R) (refer to Fig.3-1 and 3-2).

- 4) Remove the two (E) screws and then remove the SIDE PLATE (L).

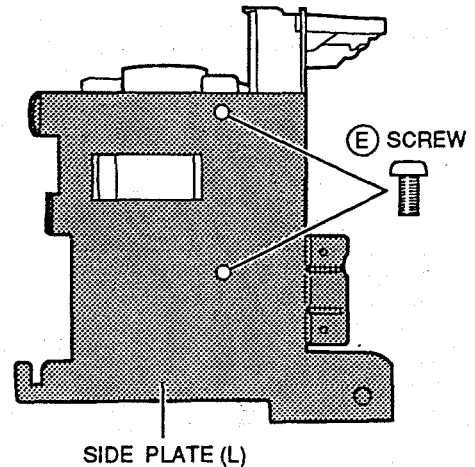


Fig. 3-3

- 5) Remove the (F) screw and three (G) screws, then remove the FW BRACKET.

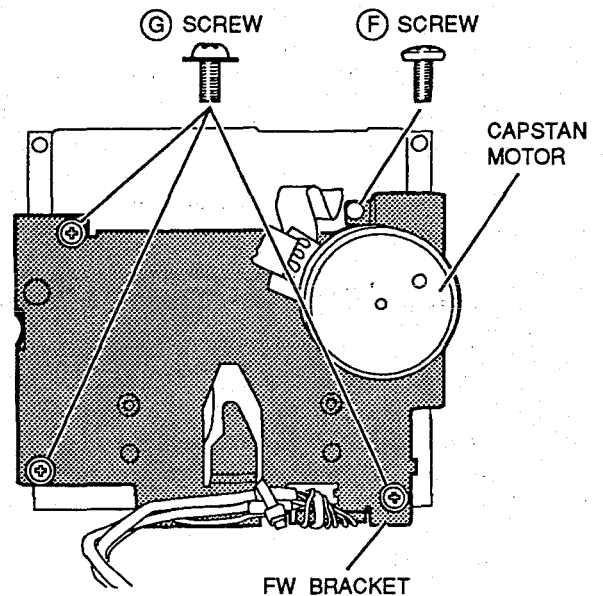


Fig. 3-4

- 6) Change the FR BELT if necessary.

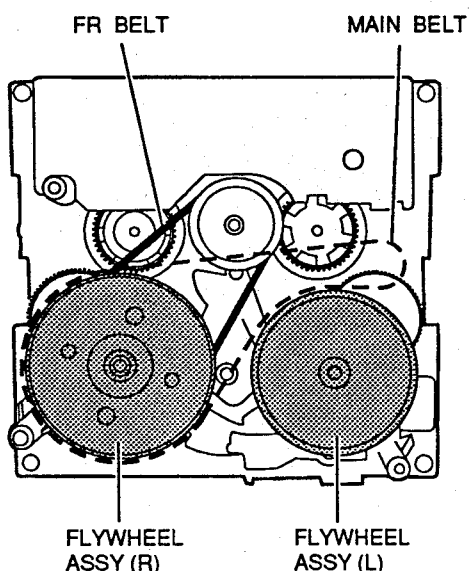


Fig. 3-5

- 7) Remove the old MAIN BELT and then place the new one on the FLYWHEEL ASS'Y (R).
- 8) Attach the FW BRACKET and tighten the four retaining screws, then thread the MAIN BELT using tweezers carefully.
- 9) Proceed in the reverse order of step 1) to 4) for installation. After replacement, tape speed adjustment must be performed.

3-2. REPLACEMENT OF THE CAPSTAN MOTOR

- 1) Unsolder the flat cable on the CAPSTAN MOTOR with a soldering iron.
- 2) Remove the FW BRACKET (refer to page 29).
- 3) Remove the two (A) retaining screws and replace the CAPSTAN MOTOR.

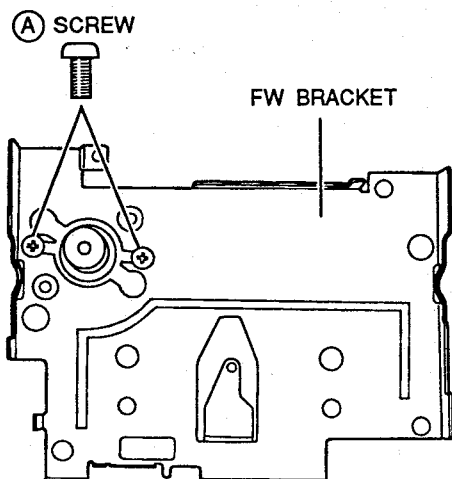


Fig. 3-6

- 4) Solder the flat cable onto the CAPSTAN MOTOR's terminal. then proceed in the reverse order for installation (refer to section 3-1 step 8)). After replacement, tape speed adjustment must be performed.

3-3. REPLACEMENT OF THE EJECT MOTOR

- 1) Remove the (B) graduated screw and remove the EJECT ARM and the EJECT TORSION SPRING (refer to Fig. 3-2).
- 2) Remove the slit washer and remove the EJECT CAM GEAR.

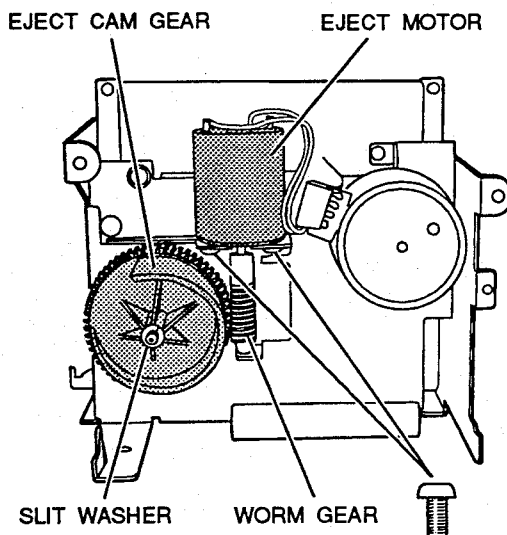


Fig. 3-7

- 3) Unsolder the two lead wires and remove the two retaining screws, then remove the EJECT MOTOR and extract the WORM GEAR.
- 4) Attach the WORM GEAR onto the new EJECT MOTOR's shaft and install it.
- 5) Attach the previously removed motor shield plate onto the new motor and then solder the lead wires.
- 6) Proceed in the reverse order of step 1) to 2) for installation.

3-4. REPLACEMENT OF THE PINCH ROLLER BLOCK

- 1) Pull the PINCH ROLLER BLOCK upward while releasing the pinch roller retaining hook in the direction of the arrow to remove it.

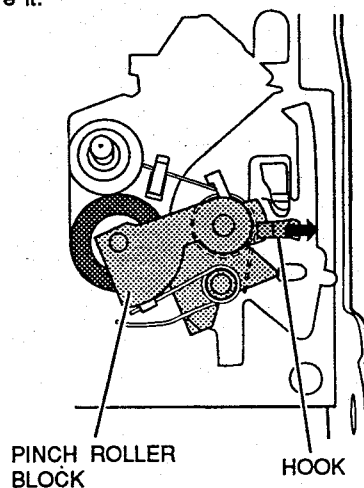


Fig. 3-8

- 2) Replace the PINCH ROLLER BLOCK and reassemble in the reverse order. Attach the two springs in the correct position when placing the PINCH ROLLER BLOCK.

3-5. REPLACEMENT OF THE PB HEAD OR REC/PB HEAD

- 1) Remove the two ④ screws and remove the HEAD SHIELD PLATE as shown in Fig. 3-1.
- 2) Disconnect all the lead wires (from the head) on the JUNCTION PCB with a soldering iron.

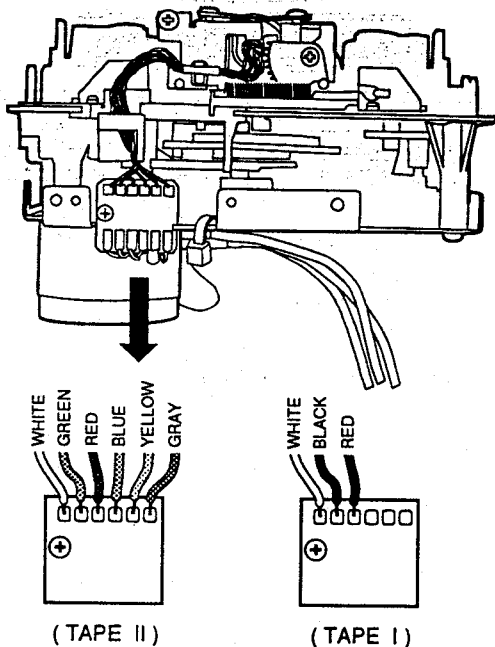


Fig. 3-9

- 3) Remove the two head retaining screws and remove the head.

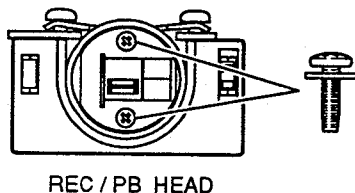


Fig. 3-10

- 4) Thread all the lead wires into the hole on the HEAD HOLDER and then tighten the two retaining screws.
- 5) Solder all the lead wires.
- 6) De-magnetize the HEAD then reassemble in the reverse order. After replacement, head azimuth and PB level adjustments are absolutely necessary for the proper performance. In addition, the REC bias current adjustment is also required for the TAPE-II HEAD (refer to sections 5-9).

Note:

If the removal of the HEAD HOLDER is necessary, align the first tooth of the HEAD HOLDER with the groove between the first and second tooth on the HEAD ARM GEAR when reassembling as shown in Fig. 3-11.

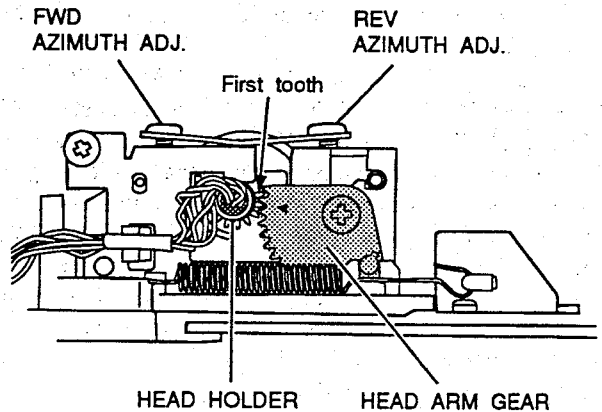


Fig. 3-11

IV. MECHANICAL ADJUSTMENT

4-1. ADJUSTMENT OF THE HEAD AZIMUTH ALIGNMENT

- 1) Connect an AC milli-voltmeters to the L-ch and R-ch of LINE OUT on the AX-890 and connect CH-1 and CH-2 inputs of an oscilloscope to the output of the AC milli-voltmeters.
- 2) Play back a 10 kHz (-15 dB), HEAD AZIMUTH ALIGNMENT TEST TAPE (TF-106CH) then adjust the PB HEAD AZIMUTH ALIGNMENT Ⓐ (FWD PLAY) and Ⓑ (REV PLAY) SCREWS respectively so that the reading on the AC milli-voltmeters are at maximum and waveforms on the oscilloscope are in the same phase, in both FWD and REV directions. Perform the adjustment on both the TAPE-I and TAPE-II heads if necessary. (Use a demagnetized philips type screwdriver for adjustment.)
- 3) After adjustment, the AZIMUTH ADJ. screws must be paint-locked (refer to Fig. 3-11 on page 31).

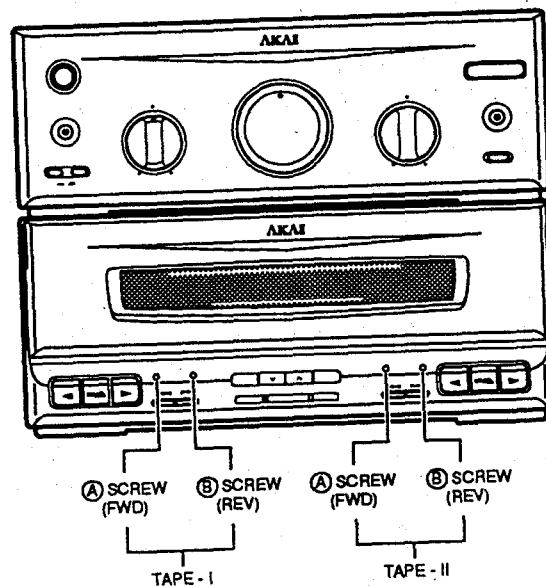


Fig. 4-1

V. ELECTRICAL ADJUSTMENT

NOTE:

- The following adjustment should be performed in the "ADJUSTMENT TEST MODE". To engage the "ADJUSTMENT TEST MODE", connect the AC power cord to the AC outlet while pressing the TAPE-I "▶" and "DUBBING START" buttons together.
When the "ADJUSTMENT TEST MODE" is engaged, the X1 DUB indicator is lit.
- When performing the tape speed adjustment, observe the following notes.
 - Adjustment should be started more than 30 seconds after the power is ON.
 - Adjustment should be made at X2 speed mode first then normal speed mode.
 - Adjustment should be made in the forward direction.
- To disengage the adjustment test mode, unplug the AC power cord from the AC outlet.
- Set the DOLBY NR switch to the "OFF" position during adjustment.
- Use one of the following tapes during adjustment in step 9.
 - Normal tape : Maxell UDI C-60
 - CrO₂ tape : TDK SA C-60
 - Metal tape : TDK MA C-60
- Before and after adjustment, clean and de-magnetize the heads.

STEP ADJUSTMENT

- Test tape/input signal
- Mode
- Check point, adjustment part
- Remarks (•) and result (*)

Adjustment Part

Test Point

8 DIP POINT

- Normal type blank tape
- TAPE-II REC
- R413, T402 (L) & T452 (R)
- Connect a DC voltmeter to both of the R413's leads.
 - Turn the core of the T402 and T452 alternately so that the meter registers a minimum reading.

7 ERASE OSC FREQUENCY

- Normal type blank tape
- TAPE-II REC
- C405, T401
- Connect a frequency counter between C405's lead and GND. (10 : 1 probe should be used to avoid affecting to the measurement.)
 - Turn the core of the T401 so that the frequency is 100.0 ± 0.2 kHz.

3 TAPE-II (X2) TAPE SPEED

- 3,150 Hz test tape (TF-110CT)
- PLAY
- LINE OUT, VR603
- Connect a frequency counter to LINE OUT and press the "DUBBING START" button to engage the double tape speed.
 - $6,300 \pm 20$ Hz

4 TAPE-II NORMAL TAPE SPEED

- 3,150 Hz test tape (TF-110CT)
- PLAY
- LINE OUT, VR604
- Connect a frequency counter to LINE OUT and press the "DUBBING START" button again to resume normal tape speed.
 - $3,150 \pm 10$ Hz

5 TAPE-I PB LEVEL

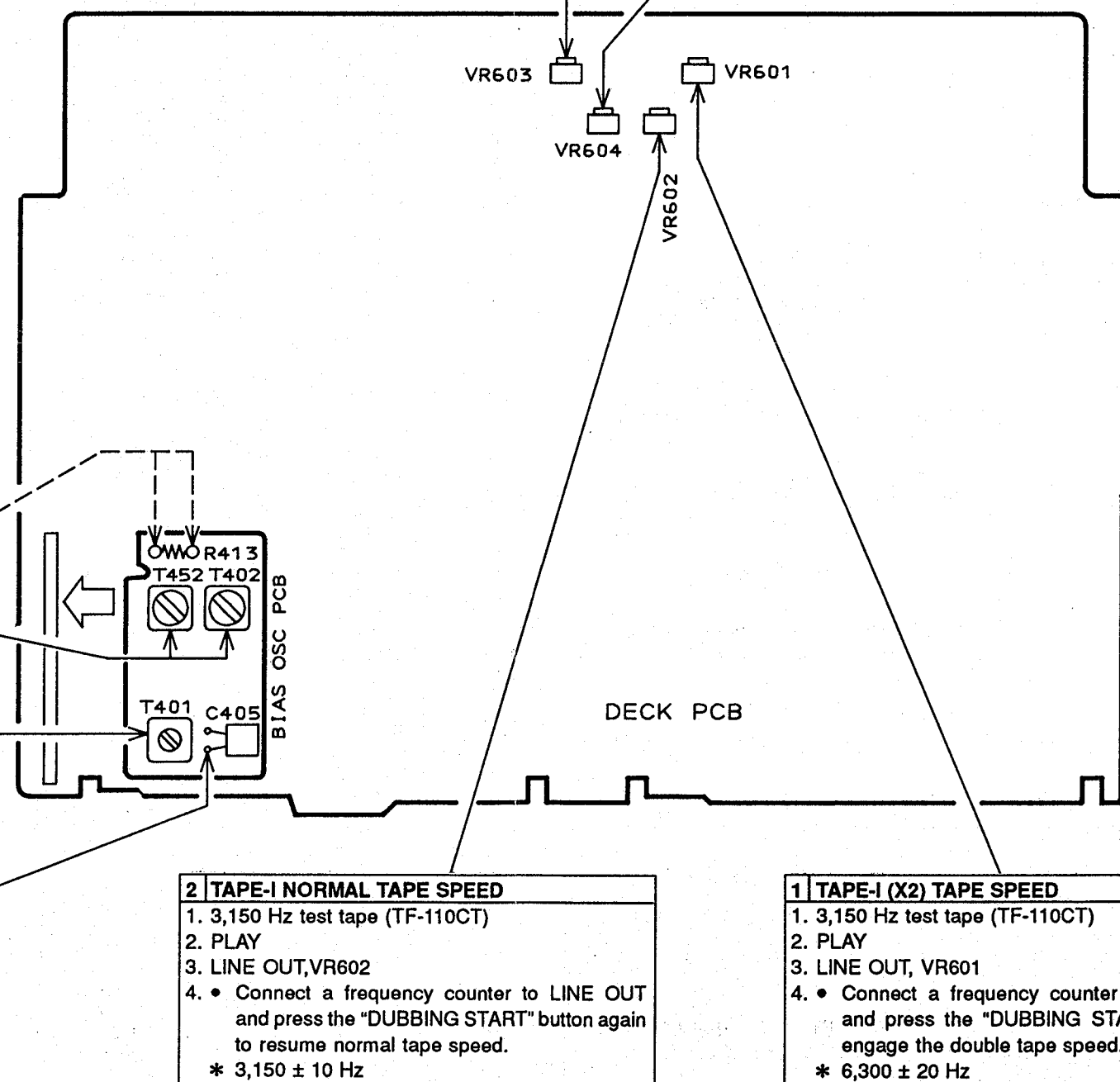
- 315 Hz test tape (TF-101CL)
- PLAY
- Line out
- Connect an AC milli-voltmeter to LINE OUT.
 - Press the "AUDIO I-HQ" button during playback.
 - Confirm that both the L and R output levels are -6.0 ± 3 dBs after the AUDIO I-HQ indicator in the FL display has disappeared.

6 TAPE-II PB LEVEL

- 315 Hz test tape (TF-101CL)
- PLAY
- Line out
- Connect an AC milli-voltmeter to LINE OUT.
 - Press the "AUDIO I-HQ" button during playback.
 - Confirm that both the L and R output levels are -6.0 ± 3 dBs after the AUDIO I-HQ indicator in the FL display has disappeared.

9 REC BIAS PRESET

- Normal, CrO₂ and Metal type blank tape
- REC
-
- Load a normal type blank tape and start recording.
 - Press the "AUDIO I-HQ" button and then eject the tape after the AUDIO I-HQ indicator in the FL display disappeared and the "REC PAUSE" mode has been engaged.
 - Change the tape to the CrO₂ and Metal types respectively and repeat the preset with the same manner as normal type tape.



2 TAPE-I NORMAL TAPE SPEED

- 3,150 Hz test tape (TF-110CT)
- PLAY
- LINE OUT, VR602
- Connect a frequency counter to LINE OUT and press the "DUBBING START" button again to resume normal tape speed.
 - $3,150 \pm 10$ Hz

1 TAPE-I (X2) TAPE SPEED

- 3,150 Hz test tape (TF-110CT)
- PLAY
- LINE OUT, VR601
- Connect a frequency counter to LINE OUT and press the "DUBBING START" button to engage the double tape speed.
 - $6,300 \pm 20$ Hz

VI. PARTS LIST

ATTENTION

- 1. When placing an order for parts, be sure to list the Part No., Model No. and the description of each part. Otherwise, the non-delivery of the part or the delivery of a wrong part may result.
- 2. Please make sure that Part No. is correct when ordering. If not, a part different from the one you ordered may be delivered.
- 3. Since the parts shown in Parts List or Preliminary Service Manual may have been the subject of changes, please use this Parts List for all future reference.

HOW TO USE THIS PARTS LIST

- 1. This Parts List lists those parts which are considered necessary for repairs. Other common parts, such as resistors and capacitors, are listed in the "Common List for Service Parts" from which these parts should be selected and stocked.
- 2. The Recommended Spare Parts List shows those parts in the Parts List which are considered particularly important for service.
- 3. Parts not shown in the Parts List and "Common List for Service Parts" will not in principle be supplied.
- 4. How to read the Parts List.

a) Mechanism Block

2. HEAD BASE BLOCK

Ref. No.	Part. No.	Description
1	BH-T2023A320A	HEAD BASE BLOCK
2	HP-H2206A010A	HEAD R/P PR4-8FU C
3	ZS-477876	PAN20x03STL CMT
4	ZS-536488	BID20x08STL CMT
5	ZG-402895	SP CS ANGLE ADJUST

SP (Service Parts) Classification

This number corresponds with the individual parts index number in the figure.

b) PC Block

2. MAIN PC BOARD

Ref. No.	Part. No.	Description
IC1	EI-324536	IC HD14049BP
IC2	EI-336801	IC MB8841-564M
C1A	EC-338399	C MMY V 223M 250AC [U,E,B,S]
C1B	EC-350949	C MMY V 223M 250DC [J]
C1C	EC-338397	C MMY V 223M 125AC [C,A]
X1	EI-318384	OSC X'TAL NC-18C

Symbols for primary destination

[A]: AAL (U.S.A) [S]: SAA (Australia)

[B]: BEAB (England) [U]: U/T (Universal Area)

[C]: CSA (Canada)

[E]: CEE (Europe) [V]: VDE (Germany)

[J]: JPN (Japan) [Y]: Custom

SP (Service Parts) Classification

These reference symbols correspond with component symbols in the Schematic Diagrams.

- The available PC Board Blocks are listed separately.
- 5. When Part No. is known, Parts Index at end of Parts List can be used to locate where that part is shown in Parts List by its Reference No. listed at right of Part No.

WARNING

Δ (*) INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS.

AVERTISSEMENT

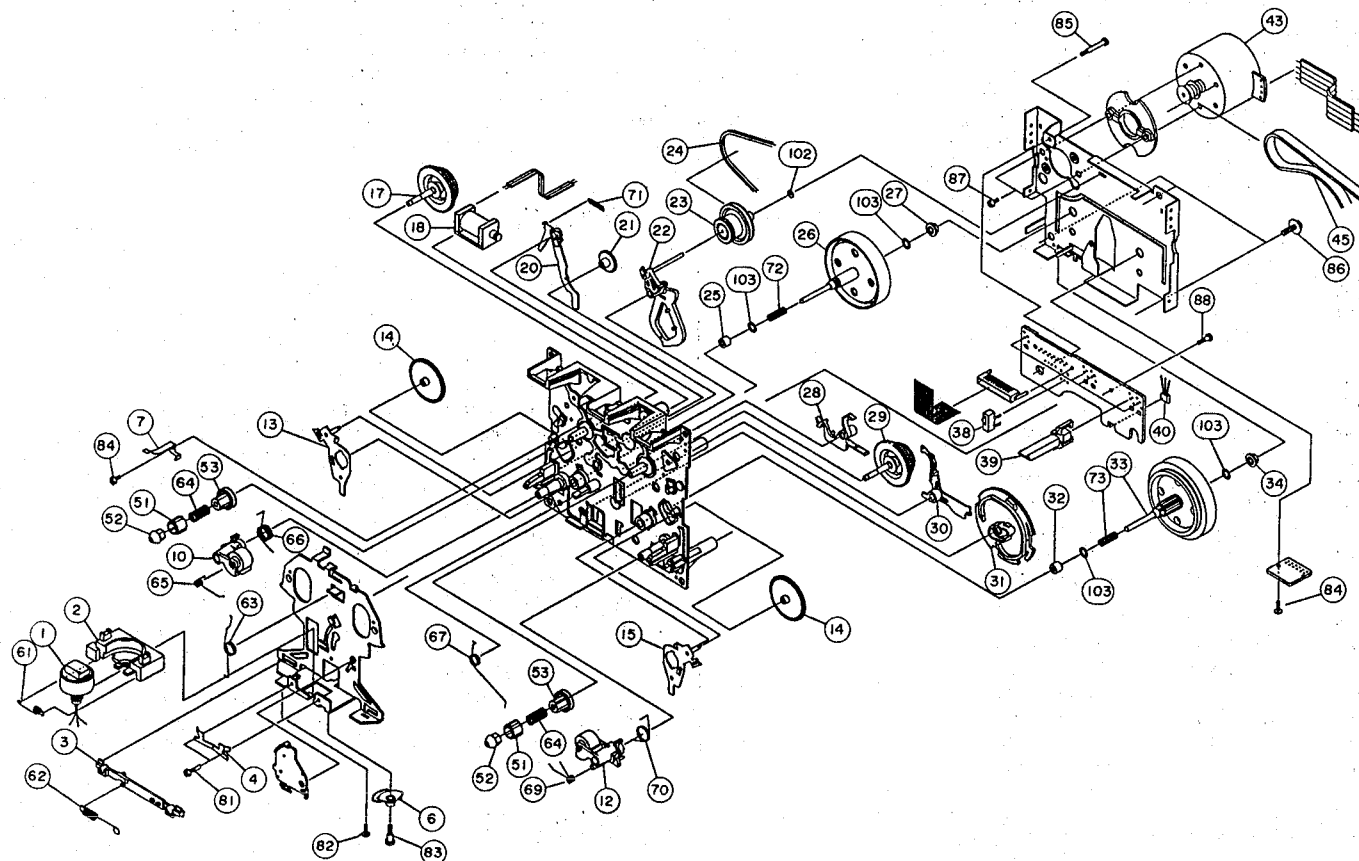
Δ (*) IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.

1. RECOMMENDED SPARE PARTS

We suggest you to stock the following Recommended Spare Part items listed below since they can cover most of the routine service.

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1	AX-422294N	REMOCON RC-S890	62	ES-733688J	SWITCH (MODE)
2	BB-418666N	MECHA CRF-4108	63	ET-356336	TR DTA114ES
		[L MECHA]	64	ET-373382	TR DTA143ZS
3	BB-418669N	MECHA CRF-4127	65	ET-354415	TR DTA144ES
		[R MECHA]	66	ET-353897	TR DTC114ES
4	BM-733691J	MOTORASSY	67	ET-354371	TR DTC124ES
5	BM-374198	MOTOR RF-370CA-15370	68	ET-364060	TR DTC143ES
6	* BT-422292N	TRANS POW C1038-E	69	ET-354364	TR DTC143TS
		[E]	70	ET-373391	TR DTC143ZS
7	* BT-422290N	TRANS POW C1038-U	71	ET-354414	TR DTC144ES
		[U,B,S]	72	ET-394570J	TR 2SA1038 S T05
8	* BT-422293N	TRANS POW C1038-V	73	ET-353899	TR 2SA1317 S,T,U
		[V]	74	ET-352726	TR 2SA1392 T,U
9	ED-418718J	D LED SEL3413E(C,D) GREEN	75	ET-305463	TR 2SA970 GR,BL
10	ED-418635J	D LED SEL6415E(C,D) GREEN	76	ET-388338J	TR 2SB1425 S,E
11	ED-307572	D SILICON H 1SS131	77	* ET-408841J	TR 2SB1565 E,F
12	* ED-384278J	D SILICON RBV602 200/6.0A	78	ET-394571J	TR 2SC2389 S,E T05
13	* ED-511907	D SILICON 1N4002 100/1.0A	79	ET-397160J	TR 2SC3330 R,S,T,U,V
14	ED-388320J	D ZENER H HZS12B3L	80	ET-378524J	TR 2SC3383 S,T,U
15	ED-407083J	D ZENER H HZS12C1L	81	ET-361736	TR 2SC3576
16	ED-418869N	D ZENER H HZS12C2L T26	82	ET-400741J	TR 2SC3708 T T05
17	ED-422073J	D ZENER H HZS30-3L T26	83	* ET-408842J	TR 2SD2394 E,F
18	ED-390652J	D ZENER H HZS5A1	84	ET-416697J	TR 2SD2396 J,K
19	* ED-408733J	D ZENER H HZS6A3L	85	EV-422303N	VR ROTA.*RK11K L=30A503
20	ED-378530J	D ZENER H HZS6B2L	86	EV-419350N	VR ROTA.RK11K1130 SP W104
21	* ED-387783J	D ZENER H HZS6C3L	87	EV-422304N	VR SPL RK16812MG B104X2
22	ED-395862J	D ZENER H HZS7A1L	88	EW-418812N	CORD FFC AD P1.25 L=68 18P
23	* ED-425401J	D ZENER H HZS7A2L	89	HP-733660J	HEAD HOLDER ASSY (PB)
24	ED-390651J	D ZENER H HZS7B2L			[CRF-4108]
25	ED-408830J	D ZENER H HZS7C1L T26	90	HR-733659J	HEAD HOLDER ASSY (REC/PB)
26	ED-387820J	D ZENER H HZS9A2L			[CRF-4127]
27	* EF-393708M	FUSE 218 TIME 250V 1.60A	91	HZ-733661J	FLAME HEAD
		[U,B,S]	92	MB-733677J	BELT FR
28	* EF-394702M	FUSE 218 TIME 250V 2.00A	93	MB-733692J	BELT MAIN
29	* EF-394703M	FUSE 218 TIME 250V 2.50A	94	MP-733666J	PINCH ARM (L) ASSY
		[E,V]	95	MP-733667J	PINCH ARM (R) ASSY
30	* EF-394704M	FUSE 218 TIME 250V 4.00A			
31	* EF-393706M	FUSE 218 TIME 250V 500MA			
32	* EF-403606M	FUSE 218 TIME 250V 800MA			
33	* EI-353421	IC BA6229			
34	EI-419333J	IC HA12169FB			
35	EI-387938J	IC HD74LS05P			
36	EI-733690J	IC LB9051A			
37	EI-419341J	IC MN12510F			
38	EI-425471J	IC M38184M8-135FP RX1DECK1			
39	EI-393323J	IC M5218AL-771			
40	EI-213390	IC NJM4558D			
41	* EI-366695	IC STK4172-2			
		[U,E,B,S]			
42	* EI-418728J	IC STK4182-2			
		[V]			
43	EI-408393J	IC ST24C01B1			
44	EI-332259	IC TC4052BP			
45	EI-200573	IC TC4053BP			
46	EI-373383	IC UPC1297CA			
47	EI-396490J	OSC CE CST4.00MGW-TF01 T05			
48	EI-418663J	OSC CE CST6.30MGW-TF01 T05			
49	EM-419261M	IND FL BJ231GK			
50	EP-733672J	SOLENOID			
51	EQ-422089N	RELAY POW DH2S 2NO 12V			
52	* ER-328278	R FUSE H ERD2FC 1/4W 10R0G			
53	* ER-200746	R FUSE H ERD2FC 1/4W 1000G			
54	* ER-318248	R FUSE H S10 ERD2FC 1/4W 47R0G			
55	* ER-401039J	R FUSE V T05 ERD2FCV 1/4W 4R7J			
56	ES-408755M	SW LEAF LSA-2127E			
57	ES-419356N	SW PUSH PS-135M2-A22S 2-02N			
58	* ES-418650J	SW SELECT ESE-37311			
59	ES-396610J	SW TACT SOR-122HS T05			
60	ES-414593J	SW TACT SOR-142HS T05			
61	ES-733689J	SWITCH (LEAF)			

MACHANISM BLOCK



2. MACHANISM BLOCK

Ref. No.	Part No.	Description
1-A	HR-733659J	HEAD HOLDER ASSY (REC/PB) [CRF-4127]
1-B	HP-733660J	HEAD HOLDER ASSY (PB) [CRF-4108]
2	HZ-733661J	FLAME HEAD
3	ML-733662J	LEVER HEAD
4	ZG-733663J	SPRING AZIMUTH
6	MZ-733664J	GEAR HEAD ARM
7	ZG-733665J	SPRING CASSETTE
10	MP-733666J	PINCH ARM (L) ASSY
12	MP-733667J	PINCH ARM (R) ASSY
13	ML-733668J	ARM PLAY (L)
14	MZ-733669J	GEAR PLAY
15	ML-733670J	ARM PLAY (R)
17	MT-733671J	SUB REEL (L) ASSY
18	EP-733672J	SOLENOID
20	ML-733673J	ARM RVS
21	MZ-733674J	GEAR FF
22	ML-733675J	ARM FRASSY
23	MR-733676J	PULLEY FRASSY
24	MB-733677J	BELT FR
25	MV-733678J	METAL
26	MI-733679J	FLYWHEEL (L) ASSY
27	MV-733680J	METAL
28	ML-733681J	ARM BRAKE
29	MT-733682J	SUB REEL (R) ASSY
30	ML-733683J	ARM TRIGGER
31	MZ-733684J	GEAR CAM
32	MV-733685J	METAL
33	MI-733686J	FLYWHEEL (R) ASSY
34	MV-733687J	METAL
38	ES-733688J	SWITCH (MODE)
39	ES-733689J	SWITCH (LEAF)
40	EI-733690J	IC LB9051A
43	BM-733691J	MOTOR ASSY
45	MB-733692J	BELT MAIN
51	MT-733693J	REEL A
52	MT-733694J	REEL B
53	MR-733695J	PULLEY REEL
61	ZG-733696J	SPRING
62	ZG-733697J	SPRING
63	ZG-733698J	SPRING
64	ZG-733699J	SPRING
65	ZG-733700J	SPRING
66	ZG-733701J	SPRING
67	ZG-733702J	SPRING
69	ZG-733703J	SPRING
70	ZG-733704J	SPRING
71	ZG-733705J	SPRING
72	ZG-733706J	SPRING
73	ZG-733707J	SPRING
81	ZS-733708J	SCREW (AZIMUTH)
82	ZS-733709J	SCREW 20X06
83	ZS-733710J	SCREW
84	ZS-733711J	SCREW 20X04
85	ZS-733712J	SCREW 20X16
86	ZS-733713J	SCREW 26X08
87	ZS-733714J	SCREW 26X07
88	ZS-733715J	SCREW 26X08
102	ZW-733716J	WASHER 16X040X040
103	ZW-733717J	WASHER 26X042X013

NOTE :

Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

3. P.C. BOARD BLOCK

Ref. No.	Part No.	Description
1-A	BA-C1038T050A	ML PC(#) MAIN890 BLKAX-890(U)/ML [U,B,S]
1-B	BA-C1038T050B	ML PC(#) MAIN890 BLKAX-890(E)/ML [E]
1-C	BA-C1038T050C	ML PC(#) MAIN890 BLKAX-890(V)/ML [V]
2	BA-C1038T060A	ML PC(#) DECK890 BLKAX-890/ML

PC (#) MAIN BLK CONSISTS OF FOLLOWING P.C. BOARDS.

- INPUT P.C. BOARD
- POWER SUPPLY P.C. BOARD
- MAIN AMP P.C. BOARD
- POWER IC P.C. BOARD

PC (#) DECK BLK CONSISTS OF FOLLOWING P.C. BOARDS.

- DECK P.C. BOARD
- BIAS OSC P.C. BOARD
- FLD P.C. BOARD
- OPERATION P.C. BOARD
- PRE-AMP P.C. BOARD
- MAIN VOLUME P.C. BOARD
- PHONES JACK P.C. BOARD
- VOLUME LED P.C. BOARD
- SPEAKER SW P.C. BOARD
- MIC JACK P.C. BOARD

4. INPUT P.C. BOARD

Ref. No.	Part No.	Description
C91	* EC-389414J	C CE V DE7090 B102K 400AC
D1	* ED-408733J	D ZENER H HZS6A3L
D2	* ED-511907	D SILICON 1N4002 100/1.0A
D3	* ED-511907	D SILICON 1N4002 100/1.0A
D4	* ED-511907	D SILICON 1N4002 100/1.0A
D5	* ED-511907	D SILICON 1N4002 100/1.0A
FR1	* ER-200746	R FUSE H ERD2FC 1/4W 1000G
FR2	* ER-200746	R FUSE H ERD2FC 1/4W 1000G
IC101	EI-213390	IC NJM4558D
IC102	EI-213390	IC NJM4558D
IC103	EI-213390	IC NJM4558D
IC104	EI-200573	IC TC4053BP
IC105	EI-200573	IC TC4053BP
IC106	EI-332259	IC TC4052BP
IC107	EI-200573	IC TC4053BP
IC108	EI-200573	IC TC4053BP
J1	EJ-419346N	PIN J YKC21-3164 6P
J2	EJ-408717J	SOCKET CFG1115-0121 RED 15P
J6	EJ-419342J	SOCKET CFG1117-0101 BLACK 17P
J101	* EJ-416590J1	SOCKET INLET CCT-2302-0371 2P
L91	* EO-416686J	COIL LF LF-4D-102 102UH
R34-A	ER-382474J	R OMF H S10 FS 1/2W 1R2J [U,B,S]
R34-B	ER-418873N	R OMF V T05FS ERX12SE1/2W 3R3J [V]
F1-A	* EF-393708M	FUSE 218 TIME 250V 1.60A [U,B,S]
F1-B	* EF-394703M	FUSE 218 TIME 250V 2.50A [E,V]
F2	* EF-393708M	FUSE 218 TIME 250V 1.60A [U,B,S]
F3	* EF-403606M	FUSE 218 TIME 250V 800MA
F4	* EF-403606M	FUSE 218 TIME 250V 800MA
F5	* EF-393706M	FUSE 218 TIME 250V 500MA
F6	* EF-393706M	FUSE 218 TIME 250V 500MA

5. POWER SUPPLY P.C. BOARD

Ref. No.	Part No.	Description
D201	* ED-384278J	D SILICON RBV602 200/6.0A
D202	* ED-511907	D SILICON 1N4002 100/1.0A
D203	* ED-511907	D SILICON 1N4002 100/1.0A
D204	* ED-511907	D SILICON 1N4002 100/1.0A
D205	* ED-511907	D SILICON 1N4002 100/1.0A
D206	* ED-511907	D SILICON 1N4002 100/1.0A
D207	* ED-511907	D SILICON 1N4002 100/1.0A
D208	* ED-511907	D SILICON 1N4002 100/1.0A
D209	* ED-511907	D SILICON 1N4002 100/1.0A
D210	* ED-511907	D SILICON 1N4002 100/1.0A
D211	ED-307572	D SILICON H 1SS131
D212	ED-307572	D SILICON H 1SS131
D213	ED-307572	D SILICON H 1SS131
D214	ED-307572	D SILICON H 1SS131
D215	ED-307572	D SILICON H 1SS131
D216	ED-307572	D SILICON H 1SS131
D217	ED-407083J	D ZENER H HZS12C1L
D218	ED-388320J	D ZENER H HZS12B3L
D219	ED-387820J	D ZENER H HZS9A2L
D220	ED-387820J	D ZENER H HZS9A2L
D221	ED-307572	D SILICON H 1SS131
D222	* ED-511907	D SILICON 1N4002 100/1.0A
D223	* ED-511907	D SILICON 1N4002 100/1.0A
D224	ED-422073J	D ZENER H HZS30-3L T26
D225	* ED-388320J	D ZENER H HZS12B3L
D226	* ED-387783J	D ZENER H HZS6C3L
D227	* ED-425401J	D ZENER H HZS7A2L
D228	ED-307572	D SILICON H 1SS131
D229	ED-307572	D SILICON H 1SS131
D230	ED-390651J	D ZENER H HZS7B2L
D231	ED-390651J	D ZENER H HZS7B2L
D232	ED-307572	D SILICON H 1SS131
D233	ED-307572	D SILICON H 1SS131
D234	ED-307572	D SILICON H 1SS131
D235	ED-307572	D SILICON H 1SS131
D236	ED-378530J	D ZENER H HZS6B2L
D237	ED-307572	D SILICON H 1SS131
D238	ED-390652J	D ZENER H HZS5A1
D239	ED-307572	D SILICON H 1SS131
L201	EO-403613J	COIL FIX 2 202AK-018A 2R2K
L202	EO-403613J	COIL FIX 2 202AK-018A 2R2K
R224	ER-418874N	R OMF V T05FS ERG12SE1/2W 330J
R245	ER-353877	R OMF H S15 FS 1W 1R0J
R246	ER-353877	R OMF H S15 FS 1W 1R0J
R253	ER-347610	R CT P F09 PLATE 3W R22K
R254	ER-347610	R CT P F09 PLATE 3W R22K
R265	* ER-422301J	R OMF V T05FS ERG12SE1/2W 100J
R266	* ER-422301J	R OMF V T05FS ERG12SE1/2W 100J
R269	ER-368284	R OMF H S12 FS 1W 271J
R270	ER-422301J	R OMF V T05FS ERG12SE1/2W 100J
R271	ER-422301J	R OMF V T05FS ERG12SE1/2W 100J
RL201	EQ-422089N	RELAY POW DH2S 2NO 12V
TM201	EJ-408698J	TERMINAL PUSH LQR0810-0006 8P
TR201	* ET-408842J	TR 2SD2394 E,F
TR202	* ET-408841J	TR 2SB1565 E,F
TR203	ET-352726	TR 2SA1392 T,U
TR204	ET-378524J	TR 2SC3383 S,T,U
TR205	ET-354371	TR DTC124ES
TR206	ET-353899	TR 2SA1317 S,T,U
TR207	* ET-408842J	TR 2SD2394 E,F
TR208	* ET-408841J	TR 2SB1565 E,F
TR209	ET-397160J	TR 2SC3330 R,S,T,U,V
TR210	ET-353899	TR 2SA1317 S,T,U
TR211	ET-354371	TR DTC124ES
TR212	ET-354371	TR DTC124ES
TR213	ET-353899	TR 2SA1317 S,T,U
TR214	ET-397160J	TR 2SC3330 R,S,T,U,V
TR215	ET-397160J	TR 2SC3330 R,S,T,U,V
TR216	ET-397160J	TR 2SC3330 R,S,T,U,V
TR217	ET-397160J	TR 2SC3330 R,S,T,U,V
TR218	ET-397160J	TR 2SC3330 R,S,T,U,V
TR220	ET-353899	TR 2SA1317 S,T,U
TR221	* ET-408841J	TR 2SB1565 E,F
TR222	* ET-408842J	TR 2SD2394 E,F
TR223	* ET-408842J	TR 2SD2394 E,F

Ref. No.	Part No.	Description
TR224	ET-397160J	TR 2SC3330 R,S,T,U,V
TR226	ET-354414	TR DTC144ES
TR227	ET-378524J	TR 2SC3383 S,T,U
TR228	* ET-408842J	TR 2SD2394 E,F
TR229	ET-305463	TR 2SA970 GR,BL
TR230	ET-305463	TR 2SA970 GR,BL
TR231	ET-353899	TR 2SA1317 S,T,U
F7	* EF-394704M	FUSE 218 TIME 250V 4.00A
F8	* EF-394704M	FUSE 218 TIME 250V 4.00A
F9	* EF-394702M	FUSE 218 TIME 250V 2.00A
F10	* EF-394702M	FUSE 218 TIME 250V 2.00A

6. MAIN AMP P.C. BOARD

Ref. No.	Part No.	Description
D301	* ED-511907	D SILICON 1N4002 100/1.0A
D302	* ED-511907	D SILICON 1N4002 100/1.0A
R309	ER-336771	R OMF H S15 FS 1W 560J
R315	ER-422301J	R OMF V T05FS ERG12SE1/2W 100J
R359	ER-336771	R OMF H S15 FS 1W 560J
R360	ER-422301J	R OMF V T05FS ERG12SE1/2W 100J

7. POWER IC P.C. BOARD

Ref. No.	Part No.	Description
IC401-A	* EI-366695	IC STK4172-2 [U,E,B,S]
IC401-B	* EI-418728J	IC STK4182-2 [V]

8. DECK P.C. BOARD

Ref. No.	Part No.	Description
D181	ED-307572	D SILICON H 1SS131
D182	ED-307572	D SILICON H 1SS131
D183	ED-307572	D SILICON H 1SS131
D201	ED-307572	D SILICON H 1SS131
D251	ED-307572	D SILICON H 1SS131
D481	ED-418869N	D ZENER H HZS12C2L T26
D502	ED-307572	D SILICON H 1SS131
D503	ED-307572	D SILICON H 1SS131
D504	ED-307572	D SILICON H 1SS131
D505	ED-307572	D SILICON H 1SS131
D601	ED-307572	D SILICON H 1SS131
D602	ED-307572	D SILICON H 1SS131
D603	ED-395862J	D ZENER H HZS7A1L
FL102	EO-356809	COIL TUN 1 100Z-121 100.00KHZ
FL152	EO-356809	COIL TUN 1 100Z-121 100.00KHZ
FR481	* ER-401039J	R FUSE V T05 ERD2FCV 1/4W 4R7J
FR482	* ER-401039J	R FUSE V T05 ERD2FCV 1/4W 4R7J
FR483	* ER-318248	R FUSE H S10 ERD2FC 1/4W 47R0G
IB501	EH-422069J	COMP R RGL8X 472J
IC1	EI-39323J	IC M5218AL-771
IC101	EI-393323J	IC M5218AL-771
IC201	EI-419333J	IC HA12169FB
IC401	EI-373383	IC UPC1297CA
IC501	EI-425471J	IC M38184M8-135FP RX1DECK1
IC502	EI-387938J	IC HD74LS05P
IC503	EI-408393J	IC ST24C01B1
IC601	* EI-353421	IC BA6229
IC602	* EI-353421	IC BA6229
L401	EO-403270J	COIL FIX 1 EL0405RA T05 101J
TR1	ET-364060	TR DTC143ES
TR2	ET-354364	TR DTC143TS
TR51	ET-364060	TR DTC143ES
TR52	ET-354364	TR DTC143TS
TR101	ET-394571J	TR 2SC2389 S,E T05
TR102	ET-394571J	TR 2SC2389 S,E T05

Ref. No.	Part No.	Description
TR103	ET-397160J	TR 2SC3330 R,S,T,U,V
TR104	ET-354364	TR DTC143TS
TR105	ET-397160J	TR 2SC3330 R,S,T,U,V
TR151	ET-394571J	TR 2SC2389 S,E T05
TR152	ET-394571J	TR 2SC2389 S,E T05
TR153	ET-397160J	TR 2SC3330 R,S,T,U,V
TR154	ET-354364	TR DTC143TS
TR155	ET-397160J	TR 2SC3330 R,S,T,U,V
TR181	ET-354414	TR DTC144ES
TR182	ET-354414	TR DTC144ES
TR183	ET-394570J	TR 2SA1038 S T05
TR184	ET-394570J	TR 2SA1038 S T05
TR301	ET-397160J	TR 2SC3330 R,S,T,U,V
TR302	ET-397160J	TR 2SC3330 R,S,T,U,V
TR351	ET-397160J	TR 2SC3330 R,S,T,U,V
TR352	ET-397160J	TR 2SC3330 R,S,T,U,V
TR381	ET-373382	TR DTA143ZS
TR382	ET-354414	TR DTC144ES
TR383	ET-373382	TR DTA143ZS
TR401	ET-354414	TR DTC144ES
TR402	ET-361736	TR 2SC3576
TR403	ET-416697J	TR 2SD2396 J,K
TR404	ET-354414	TR DTC144ES
TR405	ET-354414	TR DTC144ES
TR407	ET-400741J	TR 2SC3708 T T05
TR408	ET-400741J	TR 2SC3708 T T05
TR481	ET-416697J	TR 2SD2396 J,K
TR501	ET-354414	TR DTC144ES
TR503	ET-354415	TR DTA144ES
TR504	ET-361736	TR 2SC3576
TR505	ET-361736	TR 2SC3576
TR506	ET-354415	TR DTA144ES
TR508	ET-354414	TR DTC144ES
TR601	ET-388338J	TR 2SB1425 S,E
TR602	ET-388338J	TR 2SB1425 S,E
TR603	ET-388338J	TR 2SB1425 S,E
TR604	ET-356336	TR DTA114ES
TR605	ET-373391	TR DTC143ZS
TR606	ET-373391	TR DTC143ZS
TR607	ET-373391	TR DTC143ZS
TR608	ET-397160J	TR 2SC3330 R,S,T,U,V
TR609	ET-397160J	TR 2SC3330 R,S,T,U,V
TR610	ET-354414	TR DTC144ES
TR611	ET-354414	TR DTC144ES
TR612	ET-353899	TR 2SA1317 S,T,U
TR613	ET-353899	TR 2SA1317 S,T,U
TR614	ET-373391	TR DTC143ZS
TR615	ET-373391	TR DTC143ZS
TR616	ET-388338J	TR 2SB1425 S,E
TR617	ET-388338J	TR 2SB1425 S,E
VR601	EV-408710J	R S-FIX V T05EVNDCAA03 0.1W472
VR602	EV-408779J	R S-FIX V T05EVNDCAA03 0.1W103
VR603	EV-408710J	R S-FIX V T05EVNDCAA03 0.1W472
VR604	EV-408779J	R S-FIX V T05EVNDCAA03 0.1W103
X501	EI-418663J	OSC CE CST6.30MGW-TF01 T05

9. BIAS OSC P.C. BOARD

Ref. No.	Part No.	Description
T401	EO-408762J	COIL OSC 1 T2135-1 100.0KHZ
T402	EO-408763J	COIL OSC 1 T2135-2(HX)100.0KHZ
T452	EO-408763J	COIL OSC 1 T2135-2(HX)100.0KHZ

10. FLD P.C. BOARD

Ref. No.	Part No.	Description
D701	ED-307572	D SILICON H 1SS131
D702	ED-307572	D SILICON H 1SS131
D703	ED-307572	D SILICON H 1SS131
D704	ED-307572	D SILICON H 1SS131
IB701	EH-385846J	COMP R RGL8X 473J
IB702	EH-378540J	COMP R RGL5X 103J
IC701	EI-419341J	IC MN12510F
IN701	EM-419261M	IND FL BJ231GK
J702	EJ-422061J	SOCKET 00 6216 018 100 18P
X701	EI-396490J	OSC CE CST4.00MGW-TF01 T05

11. OPERATION P.C. BOARD

Ref. No.	Part No.	Description
J701	EJ-422061J	SOCKET 00 6216 018 100 18P
TS701	ES-396610J	SW TACT SOR-122HS T05
TS702	ES-414593J	SW TACT SOR-142HS T05
TS703	ES-396610J	SW TACT SOR-122HS T05
TS704	ES-414593J	SW TACT SOR-142HS T05
TS705	ES-396610J	SW TACT SOR-122HS T05
TS706	ES-414593J	SW TACT SOR-142HS T05
TS707	ES-414593J	SW TACT SOR-142HS T05
TS708	ES-414593J	SW TACT SOR-142HS T05
TS709	ES-414593J	SW TACT SOR-142HS T05
TS710	ES-414593J	SW TACT SOR-142HS T05
TS711	ES-396610J	SW TACT SOR-122HS T05
TS712	ES-414593J	SW TACT SOR-142HS T05
TS713	ES-396610J	SW TACT SOR-122HS T05
TS714	ES-414593J	SW TACT SOR-142HS T05
TS715	ES-396610J	SW TACT SOR-122HS T05
TS716	ES-414593J	SW TACT SOR-142HS T05
TS717	ES-414593J	SW TACT SOR-142HS T05

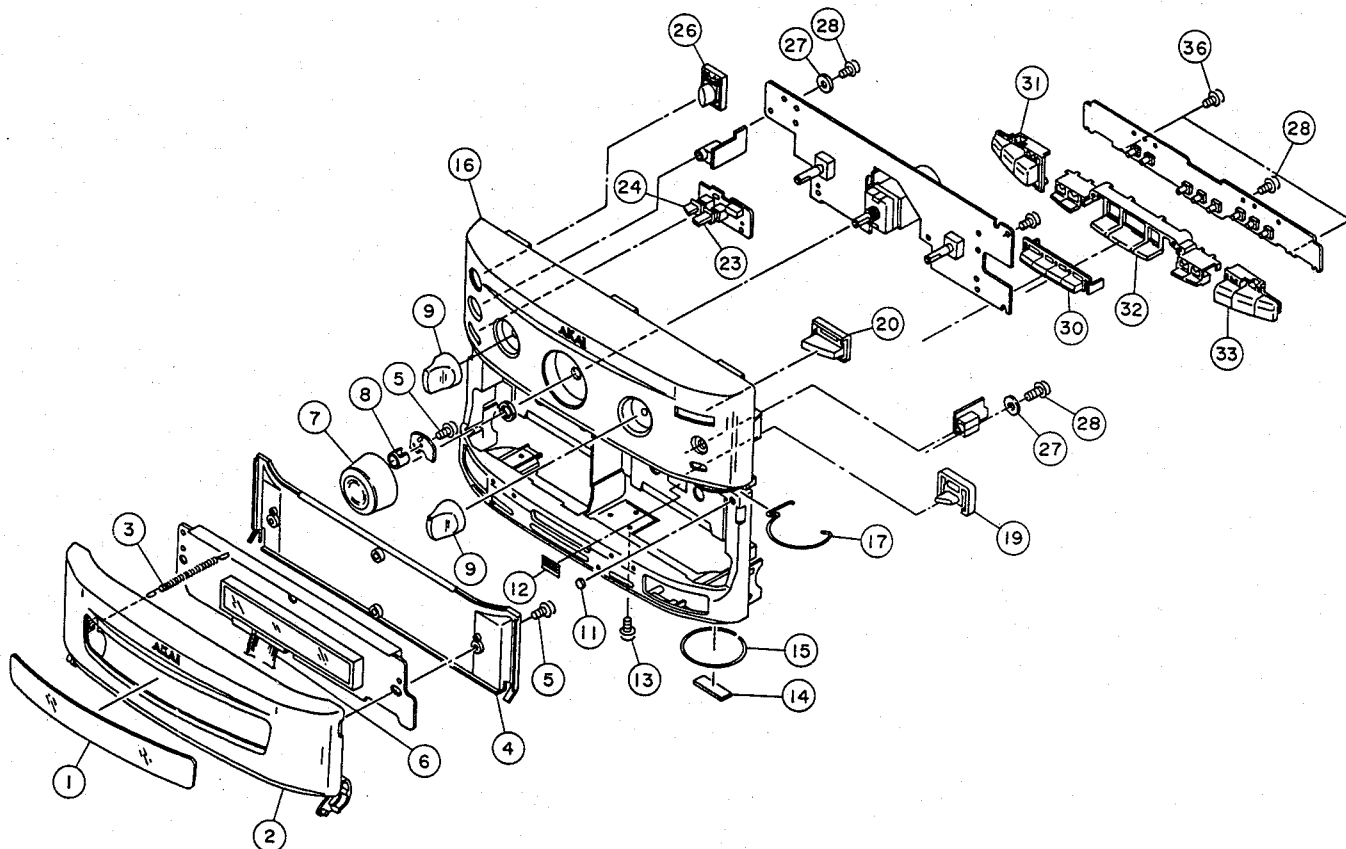
12. PRE-AMP P.C. BOARD

Ref. No.	Part No.	Description
D802	ED-418718J	D LED SEL3413E(C,D) GREEN
D803	ED-307572	D SILICON H 1SS131
D804	ED-307572	D SILICON H 1SS131
IC801	EI-213390	IC NJM4558D
IC803	EI-213390	IC NJM4558D
TR801	ET-397160J	TR 2SC3330 R,S,T,U,V
TR802	ET-397160J	TR 2SC3330 R,S,T,U,V
TR803	ET-353897	TR DTC114ES
TR804	ET-356336	TR DTA114ES
TR805	ET-373391	TR DTC143ZS
TR806	ET-397160J	TR 2SC3330 R,S,T,U,V
TR807	ET-354414	TR DTC144ES
TR808	ET-397160J	TR 2SC3330 R,S,T,U,V
TR809	ET-353899	TR 2SA1317 S,T,U
TS801	ES-396610J	SW TACT SOR-122HS T05
TS802	ES-396610J	SW TACT SOR-122HS T05
TS803	ES-396610J	SW TACT SOR-122HS T05
VR801	EV-419350N	VR ROTA.RK11K1130 SP W104
VR803	EV-422303N	VR ROTA.RK11K L=30A503

13. MAIN VOLUME P.C. BOARD

Ref. No.	Part No.	Description
D805	ED-408830J	D ZENER H HZS7C1L T26
FR801	* ER-328278	R FUSE H ERD2FC 1/4W 10R0G
IC802	EI-353421	IC BA6229
VR802	EV-422304N	VR SPL RK16812MG B104X2

FRONT PANEL BLOCK



14. PHONES JACK P.C. BOARD

Ref. No.	Part No.	Description
J20	EJ-419347N	PHONE J 3P LGY6502-0600 3.5
R803	ER-397194J	R OMF V T05FS ERG1SE 1W 331J
R853	ER-397194J	R OMF V T05FS ERG1SE 1W 331J

15. VOLUME LED P.C. BOARD

Ref. No.	Part No.	Description
D801	ED-418635J	D LED SEL6415E(C,D) GREEN

16. SPEAKER SW P.C. BOARD

Ref. No.	Part No.	Description
SW801	ES-419356N	SW PUSH PS-135M2-A22S 2-02N
SW802	ES-419356N	SW PUSH PS-135M2-A22S 2-02N

17. MIC JACK P.C. BOARD

Ref. No.	Part No.	Description
J21	EJ-419349N	PHONE J 2P YKB21-5113A 3.5

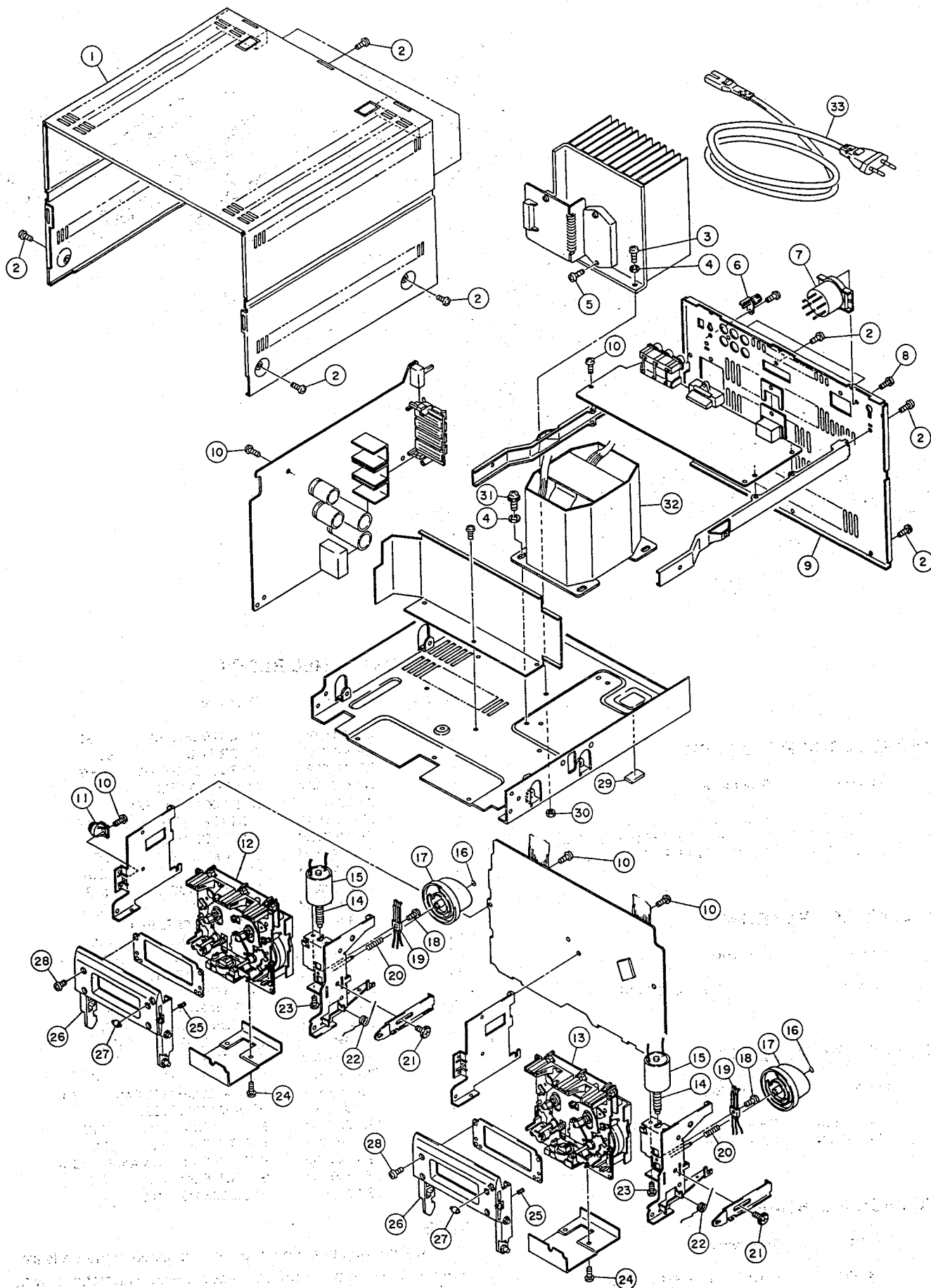
18. FRONT PANEL BLOCK

Ref. No.	Part No.	Description
1	SE-419932M	WINDOW DOOR(2) (SG)
2	SP-419928M	DOOR AX-890 (SG)
3	ZG-419992M	SP PULL DOOR 690 (SG)
4	SP-419930M	COVER DOOR(B) (SG)
5	ZS-394414J	BT BID30X08STL BZN
6	EW-418812N	CORD FFC AD P1.25 L=68 18P
7	SK-419880M	KNOB VOLUME (SG)
8	SE-419884M	LENS VOLUME (SG)
9	SK-419881M	KNOB BALANCE (SG)
11	SZ-419902M	CUSHION DOOR (SG)
12	SE-394092M	REFLECTOR (SG)
13	ZS-404181J	BT BID30X06STL BZN
14	SA-394136M	CUSHION FOOT (SG)
15	SZ-419923M	RING FOOT(1) (SG)
16	SP-420648M	PANEL FRONT 890 (SG)
17	SZ-419924M	RING FOOT(2) (SG)
19	SB-419879M	BUTTON BASS (SG)
20	SB-419877M	BUTTON INPUT (SG)
23	SB-419914M	BUTTON SP(R) (SG)
24	SB-419913M	BUTTON SP(L) (SG)
26	SB-419876M	BUTTON POWER (SG)
27	ZW-418658N	PW30X120X080STL CMT (SG)
28	ZS-393515J	BT BID30X10STL BZN
30	SB-420674M	BUTTON TUNING(A) (SG)
31	SB-419920M	BUTTON PLAY(L)-B (SG)
32	SB-419917M	BUTTON FUNCTION-AX(2) (SG)
33	SB-419921M	BUTTON PLAY(R)-B (SG)
36	ZS-331181	BT BID30X08STL NI3

NOTE :

Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

FINAL ASSEMBLY BLOCK



19. FINAL ASSEMBLY BLOCK

Ref. No.	Part No.	Description
1	SP-420650M	COVER UPPER AX(2) (SG)
2	ZS-394412J	BT BID30X08STL BZN PROJECTION
3	ZS-435273	BID40X10STL CMT
4	ZW-410640J	SW40STL CMT
5	ZS-395789J	BT BID30X16STL BZN
6	EJ-329610	TERMINAL W/SCREW UB-0067 L 1P
7	* ES-418650J	SW SELECT ESE-37311
8	ZS-393644J	{ST BID30X08STL BZN PROJECT}
9-A	SP-419896M	PANEL REAR AX-890(U) (SG)
9-B	SP-419897M	PANEL REAR AX-890(E,V) (SG)
9-C	SP-419898M	PANEL REAR -890(B,S,Y7) (SG)
10	ZS-394414J	BT BID30X08STL BZN
11	MZ-418867J	DAMPER 3F96-A-E
12	BB-418666N	MECHA CRF-4108
		[L MECHA]
13	BB-418669N	MECHA CRF-4127
		[R MECHA]
14	MZ-419867M	WORM (SG)
15	BM-374198	MOTOR RF-370CA-15370
16	ZW-377824	SLIT W26X050X025LMN
17	MZ-419866M	CAM GEAR EJECT (SG)
18	ZS-383755J	ST BID20X06STL CMT
19	ES-408755M	SW LEAF LSA-2127E
20	ZG-425111N	SP PUSH CAM GEAR (SG)
21	ZS-419870M	SCREW GRADUATED (SG)
22	ZG-419868M	SP TORSION EJECT (SG)
23	ZS-432674	PAN30X03STL CMT
24	ZS-418754N	ST PAN20X03STL CMT (SG)
25	ZG-419869M	SP PUSH CASSETTE (SG)
26	MZ-419865M1	HOLDER CASSETTE (SG)
Ref. No.	Part No.	Description
27	MR-407755M	ROLLER (SG)
28	ZS-370834	BID26X05STL BZN
29	SA-407840M	CUSHION FOOT REAR (SG)
30	ZW-311744	N40STL CMT 3
31	ZS-346742	ST PAN40X08STL CMT CUP
32-A	* BT-422290N	TRANS POW C1038-U
		[U,B,S]
32-B	* BT-422292N	TRANS POW C1038-E
		[E]
32-C	* BT-422293N	TRANS POW C1038-V
		[V]
33-A	* EW-419258M	AC CORD 200S SZ-4W H03 VVH2-F U
		[U]
33-B	* EW-419249M	AC CORD 200S SE-1 SE-4 B E
		[E,V]
33-C	* EW-419248M	AC CORD 200S SE-5 SE-6 B B
		[B]
33-D	* EW-419250M	AC CORD 200 S SA-5SA-6 S
		[S]

20. ACCESSARY

Ref. No.	Part No.	Description
1	AX-422294N	REMOCON RC-S890

NOTE :

Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

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Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.
AX422294N	20-1	ED511907	5-D204	EO416686J	4-L91	ET354371	5-TR211
BAC1038T050A	3-1-A	ED511907	5-D205	EP733672J	2-18	ET354371	5-TR212
BAC1038T050B	3-1-B	ED511907	5-D206	EQ422089N	5-RL201	ET354414	5-TR226
BAC1038T050C	3-1-C	ED511907	5-D207	ER200746	4-FR1	ET354414	8-TR181
BAC1038T060A	3-2	ED511907	5-D208	ER200746	4-FR2	ET354414	8-TR182
BB418666N	19-12	ED511907	5-D209	ER318248	8-FR483	ET354414	8-TR382
BB418669N	19-13	ED511907	5-D210	ER328278	13-FR801	ET354414	8-TR401
BM374198	19-15	ED511907	5-D222	ER336771	6-R309	ET354414	8-TR404
BM733691J	2-43	ED511907	5-D223	ER336771	6-R359	ET354414	8-TR405
BT422290N	19-32-A	ED511907	6-D301	ER347610	5-R253	ET354414	8-TR501
BT422292N	19-32-B	ED511907	6-D302	ER347610	5-R254	ET354414	8-TR508
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ED307572	5-D213	EF394702M	5-F9	ER397194J	14-R803	ET354415	8-TR506
ED307572	5-D214	EF394702M	5-F10	ER397194J	14-R853	ET356336	8-TR604
ED307572	5-D215	EF394703M	4-F1-B	ER401039J	8-FR481	ET356336	12-TR804
ED307572	5-D216	EF394704M	5-F7	ER401039J	8-FR482	ET361736	8-TR402
ED307572	5-D221	EF394704M	5-F8	ER418873N	4-R34-B	ET361736	8-TR504
ED307572	5-D228	EF403606M	4-F3	ER418874N	5-R224	ET361736	8-TR505
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ED307572	5-D232	EH378540J	10-IB702	ER422301J	5-R266	ET364060	8-TR51
ED307572	5-D233	EH385846J	10-IB701	ER422301J	5-R270	ET373382	8-TR381
ED307572	5-D234	EH422069J	8-IB501	ER422301J	5-R271	ET373382	8-TR383
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ED307572	8-D602	EI366695	7-IC401-A	ES414593J	11-TS704	ET394570J	8-TR183
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ED307572	10-D702	EI387938J	8-IC502	ES414593J	11-TS707	ET394571J	8-TR101
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ED407083J	5-D217	EJ419346N	4-J1	ET353897	12-TR803	ET397160J	8-TR302
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ED418718J	12-D802	EJ422061J	11-J701	ET353899	5-TR220	ET397160J	8-TR609
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ED422073J	5-D224	EO356809	8-FL102	ET353899	8-TR612	ET397160J	12-TR802
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ED511907	4-D2	EO403270J	8-L401	ET353899	12-TR809	ET397160J	12-TR808
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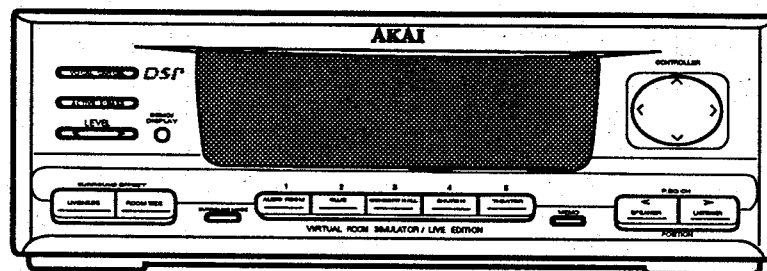
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ET408842J	5-TR222	SP419898M	19-9-C				
ET408842J	5-TR223	SP419928M	18-2				
ET408842J	5-TR228	SP419930M	18-4				
ET416697J	8-TR403	SP420648M	18-16				
ET416697J	8-TR481	SP420650M	19-1				
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EV408710J	8-VR603	SZ419923M	18-15				
EV408779J	8-VR602	SZ419924M	18-17				
EV408779J	8-VR604	ZG419868M	19-22				
EV419350N	12-VR801	ZG419869M	19-25				
EV422303N	12-VR803	ZG419992M	18-3				
EV422304N	13-VR802	ZG425111N	19-20				
EW418812N	18-6	ZG733663J	2-4				
EW419248M	19-33-C	ZG733665J	2-7				
EW419249M	19-33-B	ZG733696J	2-61				
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EW419258M	19-33-A	ZG733698J	2-63				
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HZ733661J	2-2	ZG733701J	2-66				
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ML733681J	2-28	ZS383755J	19-18				
ML733683J	2-30	ZS393515J	18-28				
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MP733667J	2-12	ZS394412J	19-2				
MR407755M	19-27	ZS394414J	18-5				
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MR733695J	2-53	ZS395789J	19-5				
MT733671J	2-17	ZS404181J	18-13				
MT733682J	2-29	ZS418754N	19-24				
MT733693J	2-51	ZS419870M	19-21				
MT733694J	2-52	ZS432674	19-23				
MV733678J	2-25	ZS435273	19-3				
MV733680J	2-27	ZS733708J	2-81				
MV733685J	2-32	ZS733709J	2-82				
MV733687J	2-34	ZS733710J	2-83				
MZ418867J	19-11	ZS733711J	2-84				
MZ419865M1	19-26	ZS733712J	2-85				
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SB419877M	18-20						
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SK419880M	18-7						
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ABBREVIATIONS (AMPLIFIER)

ABBREVIATION	EXPLANATION	ABBREVIATION	EXPLANATION
A	Analog	MC	Moving Coil
AC	Alternating Current	MM	Moving Magnet
AMP	AMPlifier	PCB	Printed Circuit Board
CD	Compact Disc	R	Right
COM	COMmon	REG	REGulator
D	Digital	REC	RECORD
D/A	Digital to Analog	TR	TRansistor
DAC	Digital to Analog Converter	SW	SWitch
DAT	Digital Audio Tape recorder	V.AMP	Voltage AMPlifier
DC	Direct Current	V.DISC	Video DISC
GND	GrouND	VR	Variable Resistance
L	Left	VTR	Video Tape Recorder
LED	Light Emitting Diode		

ABBREVIATIONS (CASSETTE)

ABBREVIATION	EXPLANATION	ABBREVIATION	EXPLANATION
AC	Alternating Current	MIN	MINute
A/D	Analog/Digital	MML	Maximum Modulation Level
AF	Auto Fader	MOL	Maximum Output Level
AMP	AMPlifier	MPX	Multi PleX
AR	Anti Recording	NC	Not Connected (No Connection)
AT BIAS	Auto Turning BIAS	NFB	Negative Feed Back
ATT	ATTenuator	NORM	NORMAL
BAL	BALance	NR	Noise Reduction
BEF	Band Elimination Filter	OSC	OSCillator (OSCillation)
BSS	Blank Search System	P	Pulse
CAP M	CAPstan Motor	PB	Play Back
CH	CHannel	QMSS	Quick Memory Search System
COMP	COMParator	QR	Quick Reverse
CONT	CONTinuanance	R CH	Right CHannel
CRLP	Computer Recording Level Processing	REC	RECORD (RECORDing)
CS	Chip Select	REV	REVERSE
D/A	Digital/Analog	ROT	ROTation
DC	Direct Current	REW	REWind
DET	DETECTOR	SEC	SECONd
DISCRI	DISCRIminator	SELE	SELEctor
DUB	DUBbing	SENS	SENSitivity
EQ	EQUALizer	SEPP	Single Ended Push Pull
FF (or F.FWD)	Fast Foward	SIG	SIGnal
FLD	FLUorescent Display	SPECT	SPECTrum
FREQ	FREQUENCY	STD	STANdard
FWD	FORWARD	SW	SWitch
GND	GrouND	SYSCON	SYSTEM CONTROL
H	High	TP	Test Point
HPF	High Pass Filter	TRIG	TRIGa
IND	INDicator	VCA	Voltage Control Attenuator
IPLS	Instant Program Location System	VOL	VOLUME
L	Low	VOLT	VOLTage
L CH	Left CHannel	VR	Variable Resistor
LED	Light Emitting Diode	X'TAL	cysTAL
MEMO	MEMOry	X1	Normal speed
MICOM	MicroCOMputer	X2	Dubble speed



VIRTUAL ROOM SIMULATOR/LIVE EDITION

MODEL EA-890

SPECIFICATION

Type of equalizer	DSP parametric equalizer
Control band	Parametric 3 band
Control frequency	60/80/100/130/160/250/500/1 k/2 k/4 k/8 k/13 k/ 20 kHz
Control range	± 10 dB
Super bass effects	6 to 15 dB / 63 Hz
Dimensions	270 (W) $\times$ 98 (H) $\times$ 298 (D) mm
Weight	1.5 kg
Power requirement	Supplied from AX-890
Power consumption	10 W (Nominal 6 W)

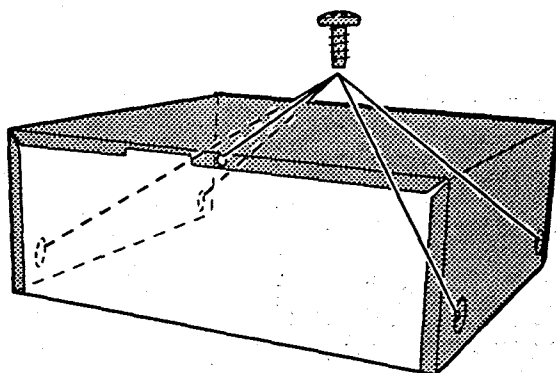
* For improvement purposes, specifications and design are subject to change without notice.

I. DISASSEMBLY

In case of trouble etc., necessitating dismantling, please dismantle in the order shown in the illustrations.
Reassemble in the reverse order.

1. Removal of UPPER COVER

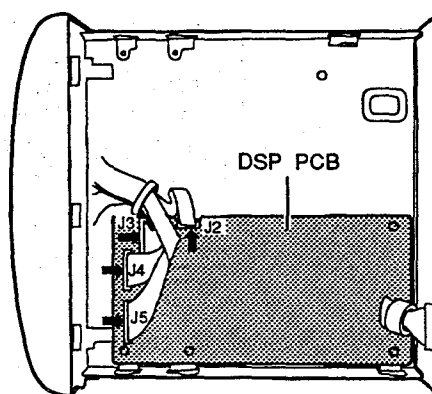
1) Remove the five screws.



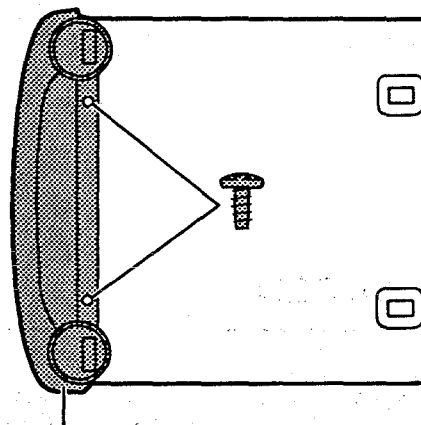
2) Remove the UPPER COVER.

2. Removal of FRONT PANEL

1) Unlock the stoppers of the J2, J3, J4 and J5 connectors on the DSP PCB by pulling them upward (refer to Note: 2 on page 10) and disconnect the flat cables.

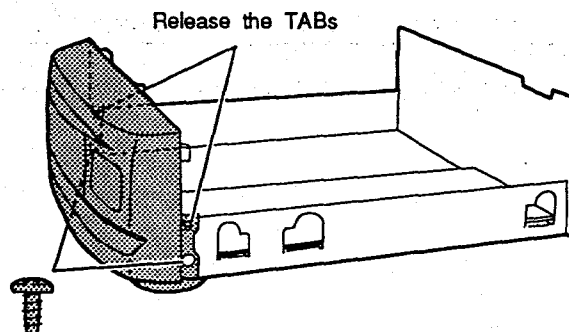


2) Remove the two screws on the bottom.



FRONT PANEL

3) Remove the two screws on both the sides and then remove the FRONT PANEL BLOCK while releasing the two tabs.



II. PRINCIPAL PARTS LOCATION

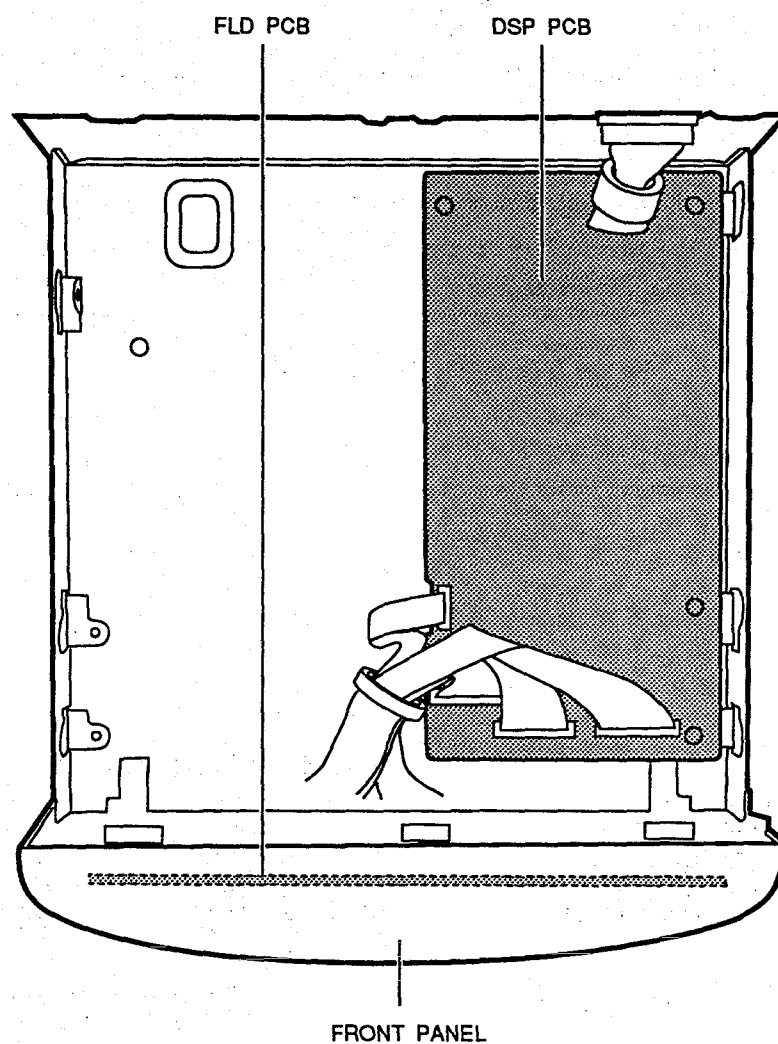


Fig. 2-1 Top view

III. PARTS LIST

ATTENTION

1. When placing an order for parts, be sure to list the Part No., Model No. and the description of each part. Otherwise, the non-delivery of the part or the delivery of a wrong part may result.
2. Please make sure that Part No. is correct when ordering.
If not, a part different from the one you ordered may be delivered.
3. Since the parts shown in Parts List or Preliminary Service Manual may have been the subject of changes, please use this Parts List for all future reference.

HOW TO USE THIS PARTS LIST

1. This Parts List lists those parts which are considered necessary for repairs. Other common parts, such as resistors and capacitors, are listed in the "Common List for Service Parts" from which these parts should be selected and stocked.
2. The Recommended Spare Parts List shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not in principle be supplied.
4. How to read the Parts List.

a) Mechanism Block

2. HEAD BASE BLOCK

Ref. No.	Part. No.	Description
1	BH-T2023A320A	HEAD BASE BLOCK
2	HP-H2206A010A	HEAD R/P PR4-8FU C
3	ZS-477876	PAN20x03STL CMT
4	ZS-536488	BID20x08STL CMT
5	ZG-402895	SP CS ANGLE ADJUST

SP (Service Parts) Classification

This number corresponds with the individual parts index number in the figure.

b) PC Block

2. MAIN PC BOARD

Ref. No.	Part. No.	Description
IC1	EI-324536	IC HD14049BP
IC2	EI-336801	IC MB8841-564M
C1A	EC-338399	C MMY V 223M 250AC [U,E,B,S]
C1B	EC-350949	C MMY V 223M 250DC [J]
C1C	EC-338397	C MMY V 223M 125AC [C,A]
X1	EI-318384	OSC X'TAL NC-18C

Symbols for primary destination

[A]: AAL (U.S.A) [S]: SAA (Australia)
[B]: BEAB (England)[U]: U/T (Universal Area)
[C]: CSA (Canada)
[E]: CEE (Europe) [V]: VDE (Germany)
[J]: JPN (Japan) [Y]: Custom

SP (Service Parts) Classification

These reference symbols correspond with component symbols in the Schematic Diagrams.

The available PC Board Blocks are listed separately.

5. When Part No. is known, Parts Index at end of Parts List can be used to locate where that part is shown in Parts List by its Reference No. listed at right of Part No.

WARNING

Δ (*) INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS.

AVERTISSEMENT

Δ (*) IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.

1. RECOMMENDED SPARE PARTS

We suggest you to stock the following Recommended Spare Part items listed below since they can cover most of the routine service.

Ref. No.	Part No.	Description
1	ED-307572	D SILICON H 1SS131
2	ED-511907	D SILICON 1N4002 100/1.0A
3	ED-393759J	D ZENER H HZS6B1L
4	EH-422066J	COMP R RGLE8T 473J
5	EI-419359J	ICAK4501-VS
6	EI-387938J	IC HD74LS05P
7	EI-422088J	IC HY62256ALJ-70
8	EI-425472J	IC M38173M6-278FP RX1DSPC1
9	EI-393325J	IC M5218AP
10	EI-213390	IC NJM4558D
11	EI-408393J	IC ST24C01B1
12	EI-419358J	IC UPD6383GF-3BA
13	EI-418663J	OSC CE CST6.30MGW-TF01 T05
14	EI-422308N	OSC X'TAL HC-49/U 22579.2KHZ
15	EM-419262M	IND FL BJ232GK
16	* ER-331619	R FUSE H S10 ERD2FCV 1/4W 39R0G
17	* ER-307565	R FUSE H S10 ERD2FC 1/4W 6R8J
18	* ER-328519	R FUSE H S10 ERD2FC 1/4W 68R0G
19	* ER-412063J	R FUSE V T05 ERD2FCV 1/4W1500G
20	* ER-401042J	R FUSE V T05 ERD2FCV 1/4W33R0G
21	ES-394818J	SW TACT SOR-123HS T05
22	ES-394427J	SW TACT SOR-133HS T05
23	ES-422074J	SW TACT SOR-143HS T05
24	ET-363953	TR DTA114TS
25	ET-369248	TR DTA114YS
26	ET-405334J	TR DTA123JS T05
27	ET-354415	TR DTA144ES
28	* ET-354365	TR DTC114YS
29	ET-354414	TR DTC144ES
30	ET-353899	TR 2SA1317 S,T,U
31	ET-397160J	TR 2SC3330 R,S,T,U,V
32	ET-361736	TR 2SC3576
33	ET-396072J	TR 2SD2159 V,W
34	ET-408842J	TR 2SD2394 E,F

2. P.C. BOARD BLOCK

Ref. No.	Part No.	Description
1	BA-D3018T030A	ML PC(8) DSP BLK EA-890(U)/ML

PC (8) DSP BLK CONSISTS OF FOLLOWING P.C. BOARDS.

* DSP P.C. BOARD

* FLD P.C. BOARD

3. DSP P.C. BOARD

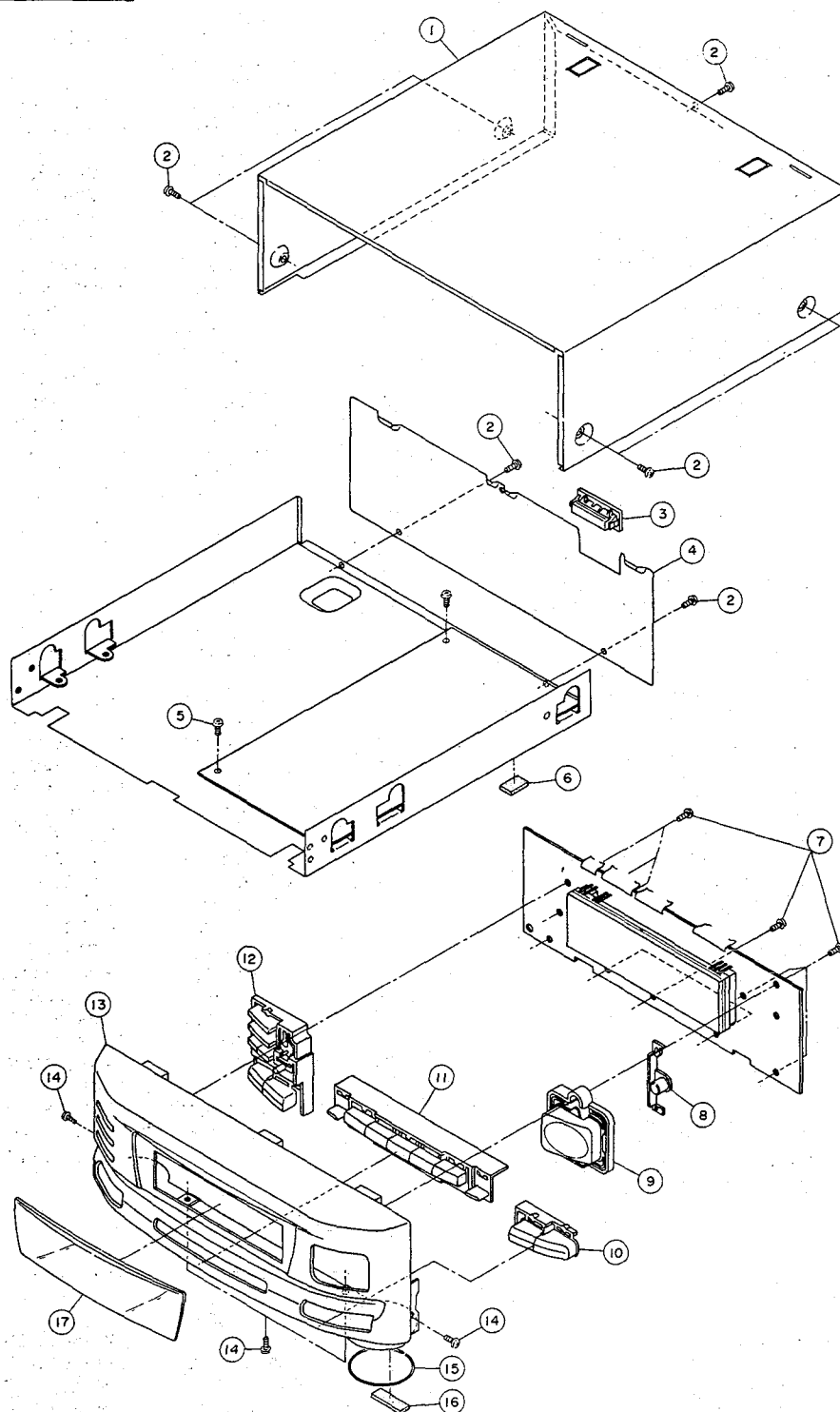
Ref. No.	Part No.	Description
D21	ED-307572	D SILICON H 1SS131
D22	ED-307572	D SILICON H 1SS131
D23	ED-307572	D SILICON H 1SS131
D31	ED-307572	D SILICON H 1SS131
D71	ED-511907	D SILICON 1N4002 100/1.0A
D72	ED-511907	D SILICON 1N4002 100/1.0A
D73	ED-511907	D SILICON 1N4002 100/1.0A
D74	ED-511907	D SILICON 1N4002 100/1.0A
D75	ED-511907	D SILICON 1N4002 100/1.0A
D76	ED-511907	D SILICON 1N4002 100/1.0A
D77	ED-393759J	D ZENER H HZS6B1L
D78	ED-393759J	D ZENER H HZS6B1L
D79	ED-393759J	D ZENER H HZS6B1L
D82	* ED-393759J	D ZENER H HZS6B1L
D83	ED-393759J	D ZENER H HZS6B1L
D84	* ED-393759J	D ZENER H HZS6B1L
D101	ED-307572	D SILICON H 1SS131
D201	ED-307572	D SILICON H 1SS131
FR71	* ER-401042J	R FUSE V T05 ERD2FCV 1/4W33R0G

Ref. No.	Part No.	Description
FR72	* ER-412063J	R FUSE V T05 ERD2FCV 1/4W1500G
FR73	* ER-331619	R FUSE H S10 ERD2FC 1/4W 39R0G
FR74	* ER-307565	R FUSE H S10 ERD2FC 1/4W 6R8J
FR75	* ER-328519	R FUSE H S10 ERD2FC 1/4W 68R0G
FR76	* ER-328519	R FUSE H S10 ERD2FC 1/4W 68R0G
IB1	EH-422066J	COMP R RGLE8T 473J
IB2	EH-422066J	COMP R RGLE8T 473J
IC1	EI-419359J	ICAK4501-VS
IC2	EI-425472J	IC M38173M6-278FP RX1DSPC1
IC3	EI-419358J	IC UPD6383GF-3BA
IC5	EI-408393J	IC ST24C01B1
IC6	EI-422088J	IC HY62256ALJ-70
IC7	EI-422088J	IC HY62256ALJ-70
IC8	EI-387938J	IC HD74LS05P
IC101	EI-213390	IC NJM4558D
IC111	EI-393325J	IC M5218AP
IC112	EI-213390	IC NJM4558D
IC201	EI-213390	IC NJM4558D
L1	EO-351866	COIL FIX 1 LAP02 F05 330K
L2	EO-354600	COIL FIX 1 LAP02 F05 101K
TR21	ET-354415	TR DTA144ES
TR22	ET-354415	TR DTA144ES
TR23	ET-363953	TR DTA114TS
TR31	ET-369248	TR DTA114YS
TR32	ET-369248	TR DTA114YS
TR33	ET-369248	TR DTA114YS
TR34	ET-369248	TR DTA114YS
TR35	ET-369248	TR DTA114YS
TR36	ET-369248	TR DTA114YS
TR37	ET-369248	TR DTA114YS
TR38	ET-369248	TR DTA114YS
TR39	ET-405334J	TR DTA123JS T05
TR40	ET-354414	TR DTC144ES
TR71	ET-396072J	TR 2SD2159 V,W
TR72	ET-353899	TR 2SA1317 S,T,U
TR73	ET-408842J	TR 2SD2394 E,F
TR74	ET-408842J	TR 2SD2394 E,F
TR75	* ET-354365	TR DTC114YS
TR76	ET-361736	TR 2SC3576
TR77	ET-361736	TR 2SC3576
TR78	ET-369248	TR DTA114YS
TR111	ET-397160J	TR 2SC3330 R,S,T,U,V
TR112	ET-397160J	TR 2SC3330 R,S,T,U,V
TR113	ET-397160J	TR 2SC3330 R,S,T,U,V
TR211	ET-397160J	TR 2SC3330 R,S,T,U,V
TR212	ET-397160J	TR 2SC3330 R,S,T,U,V
TR213	ET-397160J	TR 2SC3330 R,S,T,U,V
W1	EW-422295N	WIREASS.HFG07172301SPL580 17P
X1	EI-422308N	OSC X'TAL HC-49/U 22579.2KHZ
X3	EI-418663J	OSC CE CST6.30MGW-TF01 T05

4. FLD P.C. BOARD

Ref. No.	Part No.	Description
IN301	EM-419262M	IND FL BJ232GK
TS301	ES-394818J	SW TACT SOR-123HS T05
TS302	ES-394818J	SW TACT SOR-123HS T05
TS303	ES-422074J	SW TACT SOR-143HS T05
TS304	ES-394427J	SW TACT SOR-133HS T05
TS305	ES-394818J	SW TACT SOR-123HS T05
TS306	ES-394818J	SW TACT SOR-123HS T05
TS307	ES-394427J	SW TACT SOR-133HS T05
TS308	ES-394427J	SW TACT SOR-133HS T05
TS309	ES-394427J	SW TACT SOR-133HS T05
TS310	ES-394427J	SW TACT SOR-133HS T05
TS311	ES-394427J	SW TACT SOR-133HS T05
TS312	ES-394427J	SW TACT SOR-133HS T05
TS313	ES-394427J	SW TACT SOR-133HS T05
TS314	ES-394427J	SW TACT SOR-133HS T05
TS315	ES-394818J	SW TACT SOR-123HS T05
TS316	ES-394427J	SW TACT SOR-133HS T05
TS317	ES-394427J	SW TACT SOR-133HS T05
TS318	ES-394427J	SW TACT SOR-133HS T05
TS319	ES-394427J	SW TACT SOR-133HS T05
TS320	ES-394818J	SW TACT SOR-123HS T05

FINAL ASSEMBLY BLOCK



5. FINAL ASSEMBLY BLOCK

Ref. No.	Part No.	Description
1	SP-420661M	COVER UPPER (SG)
2	ZS-394412J	BT BID30X08STL BZN PROJECTION (SG)
3	SZ-407909M	WIRE HOLDER (SG)
4-A	SP-420671M	PANEL REAR EA-890(U) (SG)
4-B	SP-420662M	PANEL REAR EA-890(E) (SG)
5	ZS-404181J	BT BID30X06STL BZN
6	SA-407840M	CUSHION FOOT REAR (SG)
7	ZS-393515J	BT BID30X10STL BZN
8	SZ-420653M	HOLDER CURSOR (SG)
9	SB-420657M	BUTTON CURSOR (SG)
10	SB-419949M	BUTTON CHANNEL(2) (SG)
11	SB-420656M	BUTTON MOOD (SG)

Ref. No.	Part No.	Description
12	SB-419947M	BUTTON TIMER(2) (SG)
13	SP-420655M	PANEL FRONT EA-890 (SG)
14	ZS-394414J	BT BID30X08STL BZN
15	SZ-419923M	RING FOOT(1) (SG)
16	SA-394136M	CUSHION FOOT (SG)
17	SE-420659M	WINDOW FLD-EA (SG)

NOTE :

Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

INDEX

Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.
BAD3018T030A	2-1	ET363953	3-TR23				
ED307572	3-D21	ET369248	3-TR31				
ED307572	3-D22	ET369248	3-TR32				
ED307572	3-D23	ET369248	3-TR33				
ED307572	3-D31	ET369248	3-TR34				
ED307572	3-D101	ET369248	3-TR35				
ED307572	3-D201	ET369248	3-TR36				
ED393759J	3-D77	ET369248	3-TR37				
ED393759J	3-D78	ET369248	3-TR38				
ED393759J	3-D79	ET369248	3-TR78				
ED393759J	3-D82	ET396072J	3-TR71				
ED393759J	3-D83	ET397160J	3-TR111				
ED393759J	3-D84	ET397160J	3-TR112				
ED511907	3-D71	ET397160J	3-TR113				
ED511907	3-D72	ET397160J	3-TR211				
ED511907	3-D73	ET397160J	3-TR212				
ED511907	3-D74	ET397160J	3-TR213				
ED511907	3-D75	ET405334J	3-TR39				
ED511907	3-D76	ET408842J	3-TR73				
EH422066J	3-IB1	ET408842J	3-TR74				
EH422066J	3-IB2	EW422295N	3-W1				
EI213390	3-IC101	SA394136M	5-16				
EI213390	3-IC112	SA407840M	5-6				
EI213390	3-IC201	SB419947M	5-12				
EI387938J	3-IC8	SB419949M	5-10				
EI393325J	3-IC111	SB420656M	5-11				
EI408393J	3-IC5	SB420657M	5-9				
EI418663J	3-X3	SE420659M	5-17				
EI419358J	3-IC3	SP420655M	5-13				
EI419359J	3-IC1	SP420661M	5-1				
EI422088J	3-IC6	SP420662M	5-4-B				
EI422088J	3-IC7	SP420671M	5-4-A				
EI422308N	3-X1	SZ407909M	5-3				
EI425472J	3-IC2	SZ419923M	5-15				
EM419262M	4-IN301	SZ420653M	5-8				
EO351866	3-L1	ZS393515J	5-7				
EO354600	3-L2	ZS394412J	5-2				
ER307565	3-FR74	ZS394414J	5-14				
ER328519	3-FR75	ZS404181J	5-5				
ER328519	3-FR76						
ER331619	3-FR73						
ER401042J	3-FR71						
ER412063J	3-FR72						
ES394427J	4-TS304						
ES394427J	4-TS307						
ES394427J	4-TS308						
ES394427J	4-TS309						
ES394427J	4-TS310						
ES394427J	4-TS311						
ES394427J	4-TS312						
ES394427J	4-TS313						
ES394427J	4-TS314						
ES394427J	4-TS316						
ES394427J	4-TS317						
ES394427J	4-TS318						
ES394427J	4-TS319						
ES394818J	4-TS301						
ES394818J	4-TS302						
ES394818J	4-TS305						
ES394818J	4-TS306						
ES394818J	4-TS315						
ES394818J	4-TS320						
ES422074J	4-TS303						
ET353899	3-TR72						
ET354365	3-TR75						
ET354414	3-TR40						
ET354415	3-TR21						
ET354415	3-TR22						
ET361736	3-TR76						
ET361736	3-TR77						

SPEAKER SYSTEM

MODEL SR-890

I. SPECIFICATIONS

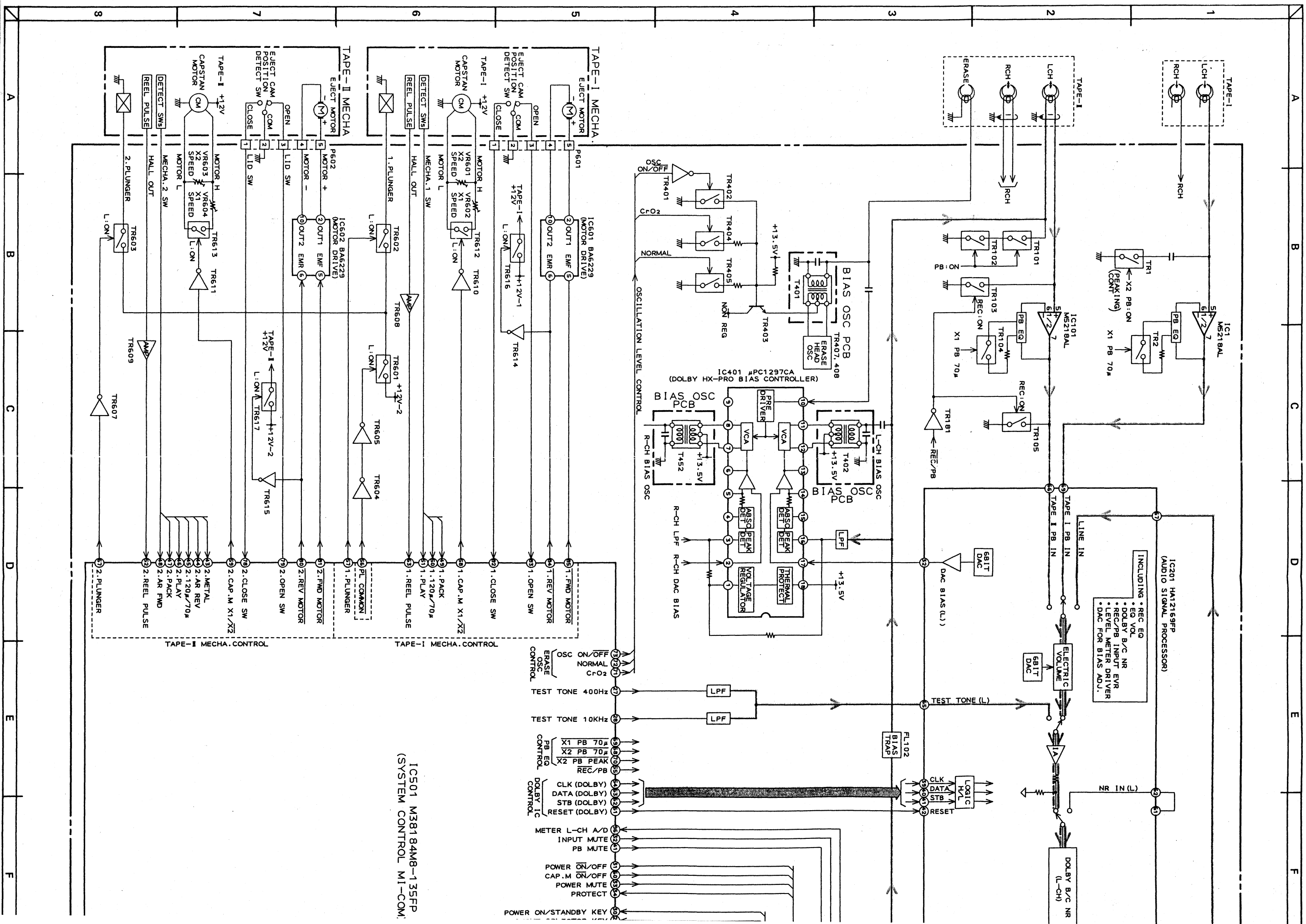
System constructions	3-WAY 3 speakers
Woofer unit	175 mm P.P. cone type
Midrange unit	57 mm cone type
Tweeter unit	20 mm dome type 40 mm ambience unit
System impedance	6 ohms
Max. power input	100 W
Sensitivity	More than 88 dB / Wb/m
Frequency range	40 Hz to 23 kHz
Harmonic distortion	Less than 2 %
Enclosure type	Front bass reflex
Units layout	L/R symmetry
Front grille	Removable (cloth)
Dimentions (with grille)	219 (W) x 417.5 (H) x 300 (D) mm
Net weight	7.2 kg / pc

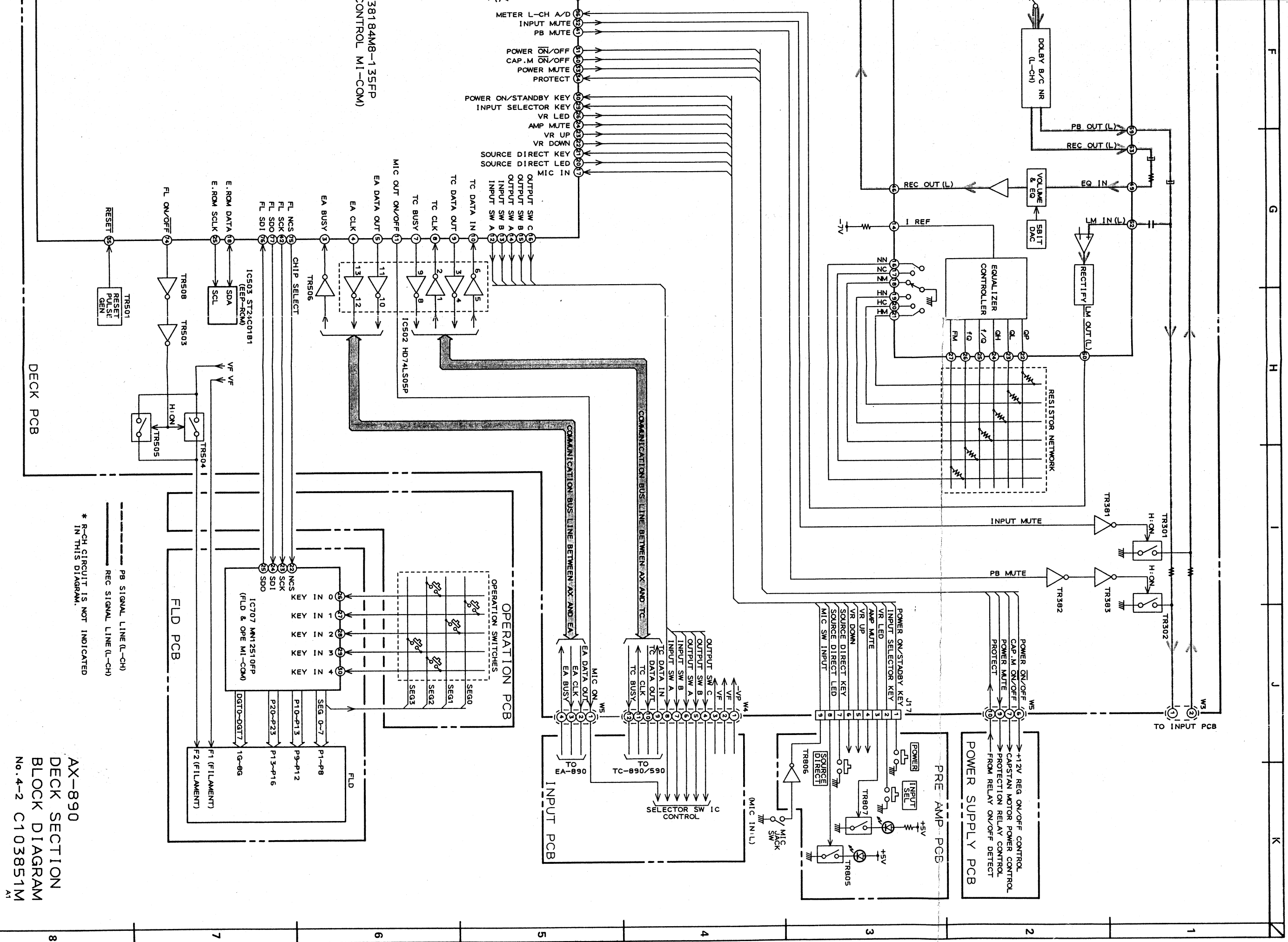
* For improvement purposes, specifications and design are subject to change without notice.

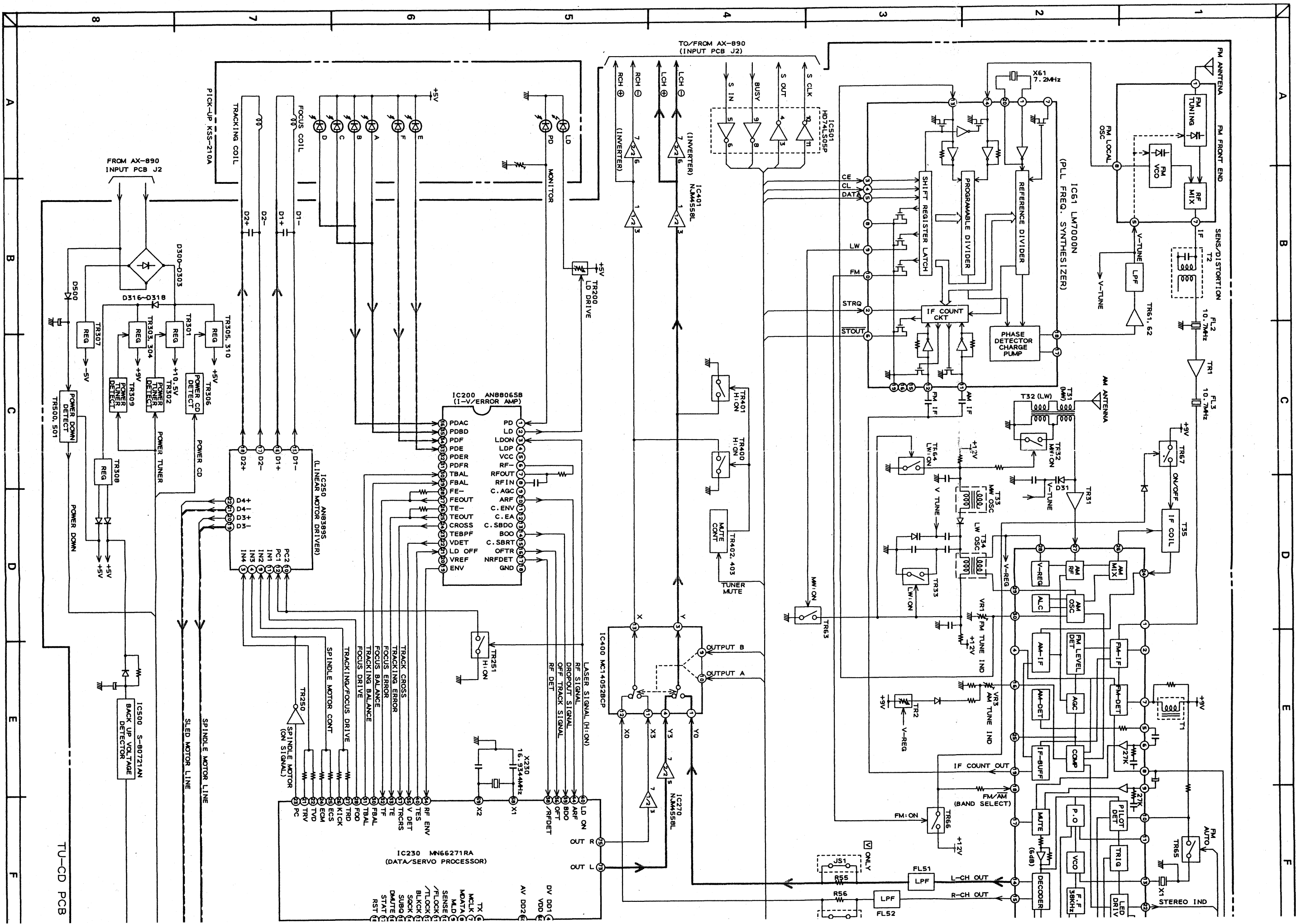
II. PARTS LIST

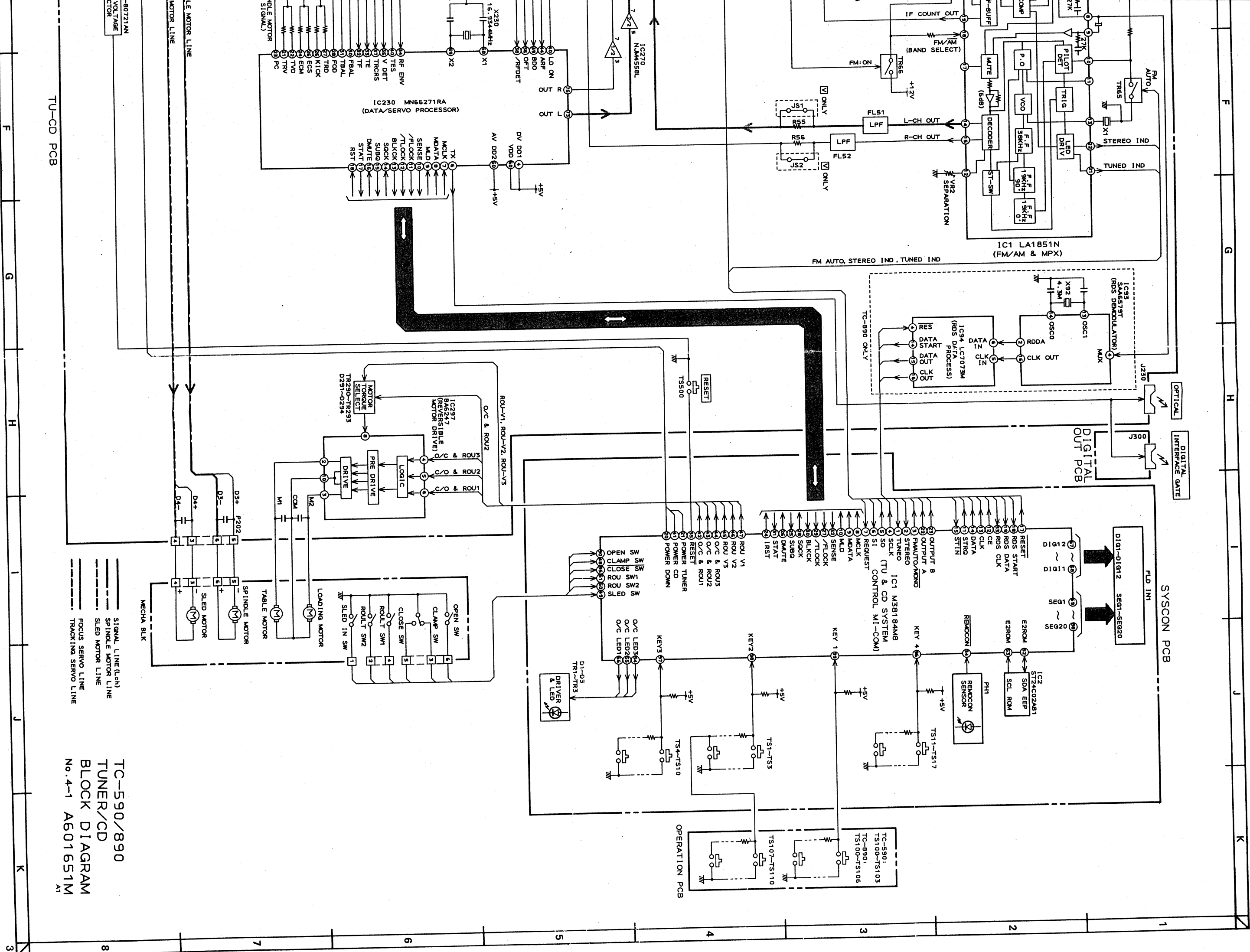
2-1. MODEL

Ref. No.	Part No.	Description
1	1545-594	SPEAKER PIEZO PT-20T-C [PIEZO-TWEETER]
2	362547	41T-SM3G [ISODYNAMIC-TWEETER]
3	1545-614	SPEAKER MIDRANGE 25DT-970 [MID-RANGE]
4	1545-617	SPEAKER WOOFER 17W-890 [WOOFER]
5	3917-543	FRONT GRILL (R) SR-890
6	3917-544	FRONT GRILL (L) SR-890
7	6554-188	CATCHER [FOR FRONT GRILL]
8	445-020-00	TERMINAL SPEAKER

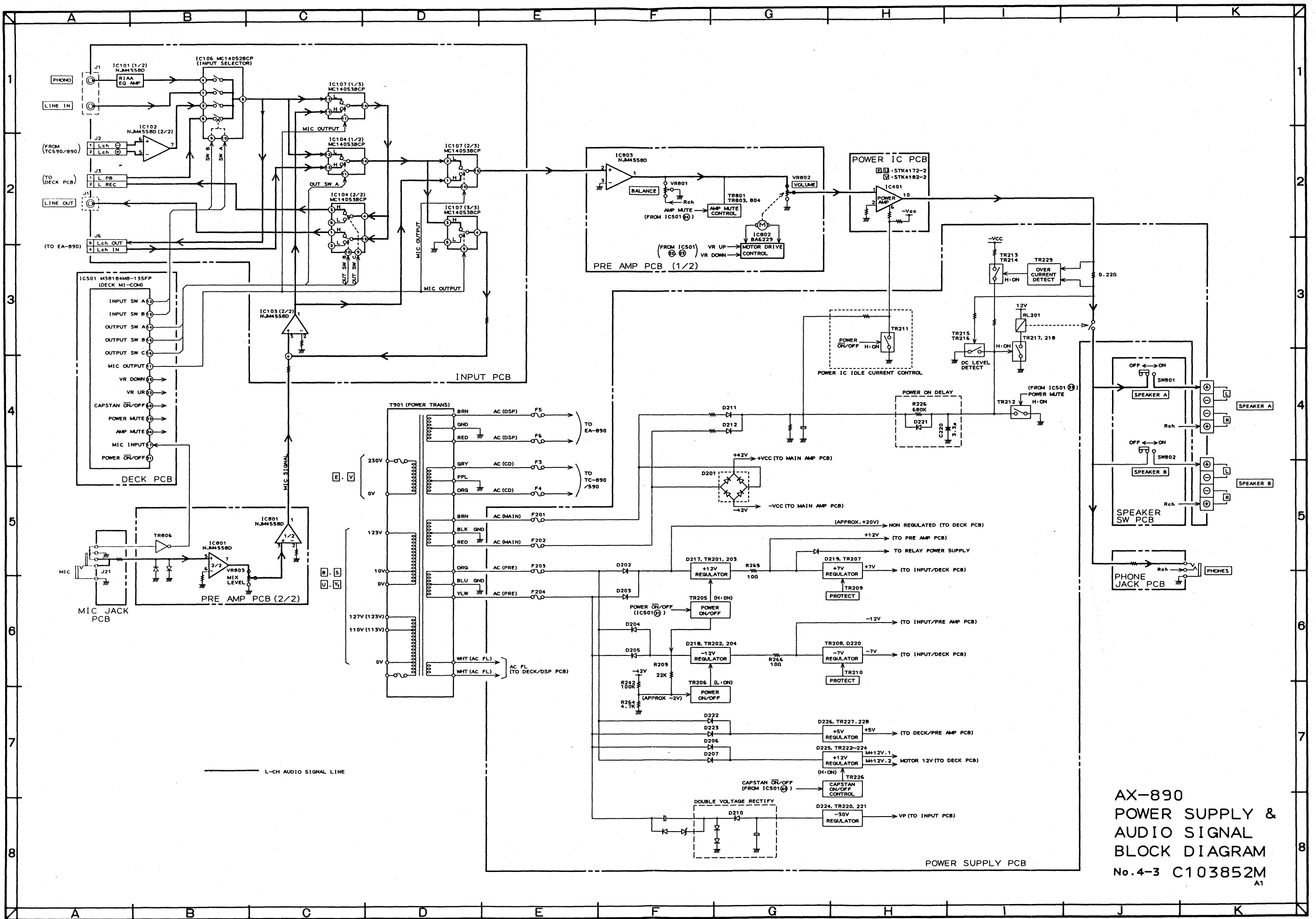


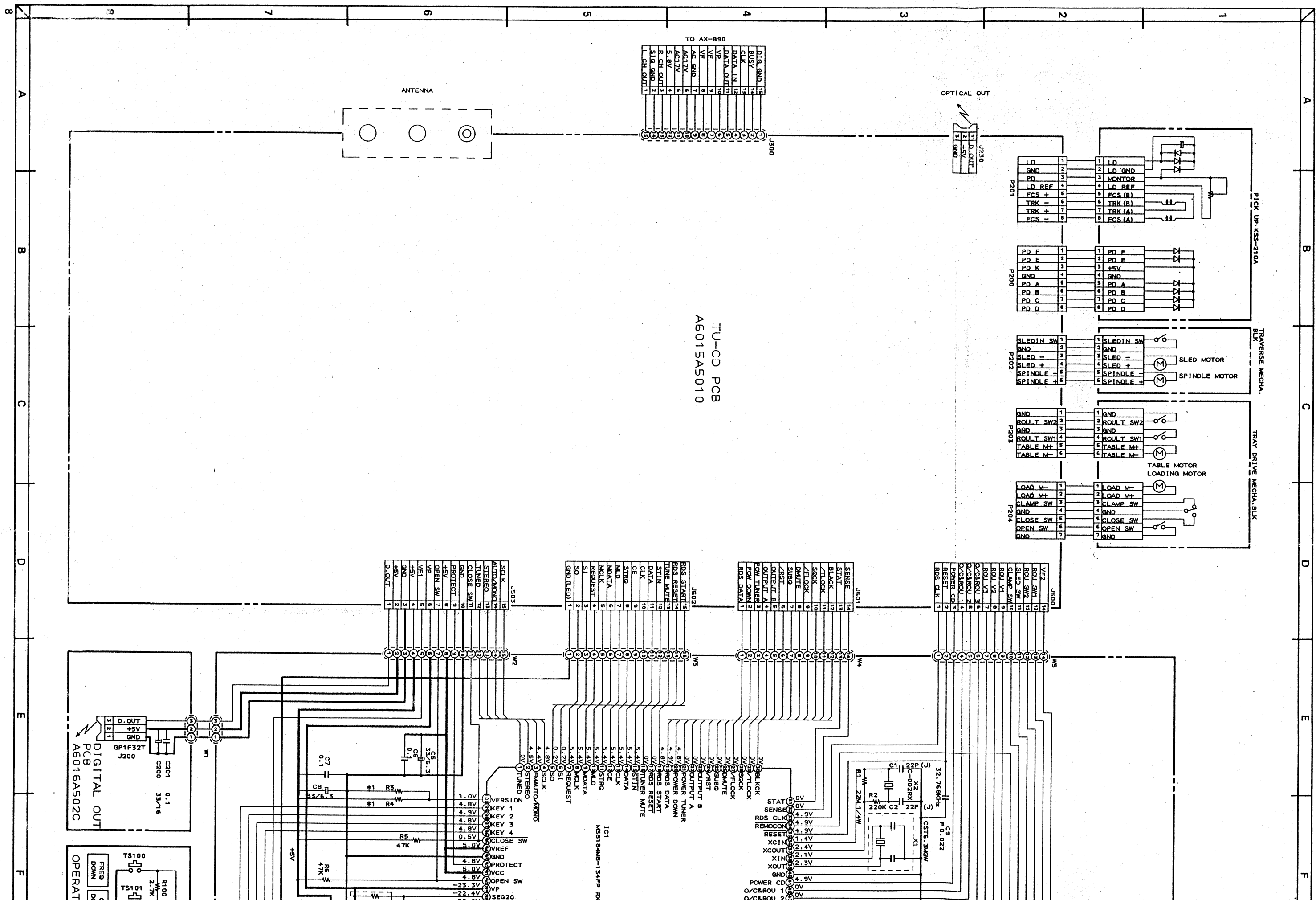


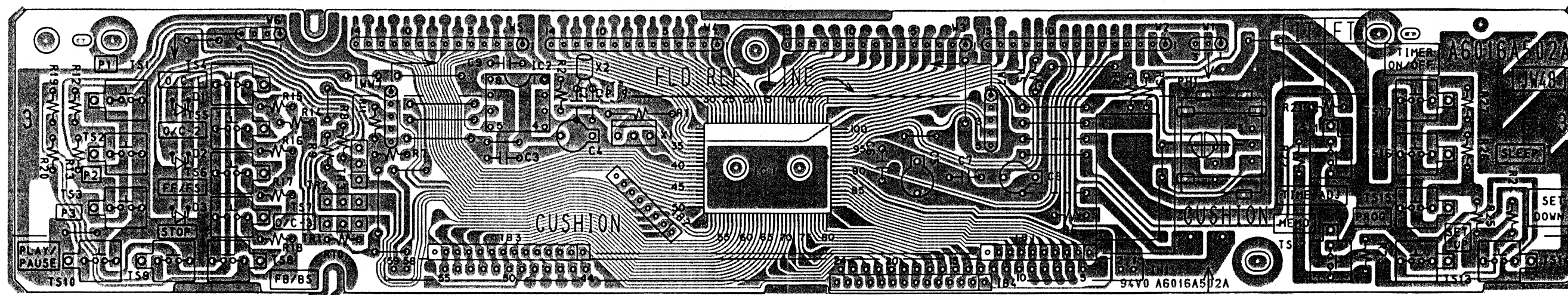




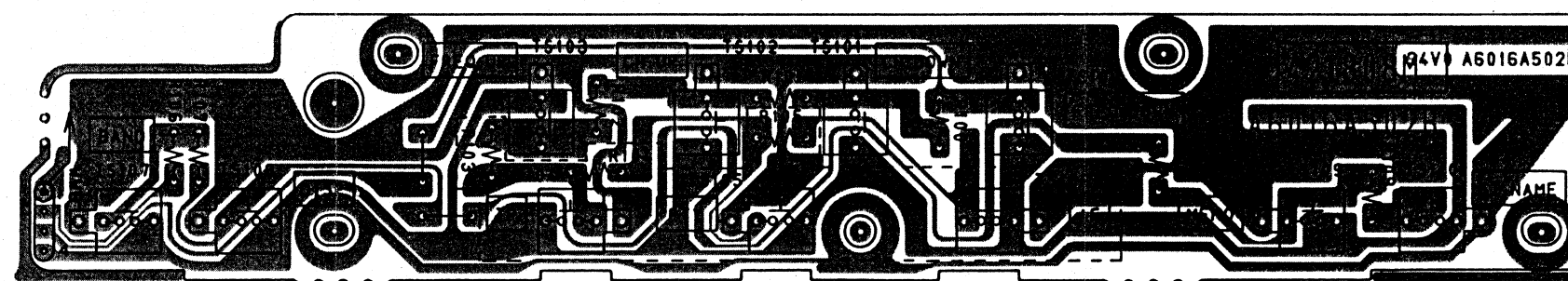
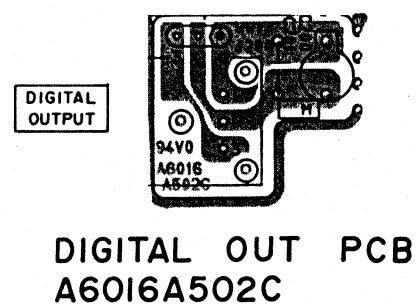
TC-590/890
TUNER/CD
BLOCK DIAGRAM
No.4-1 A601651M
A1





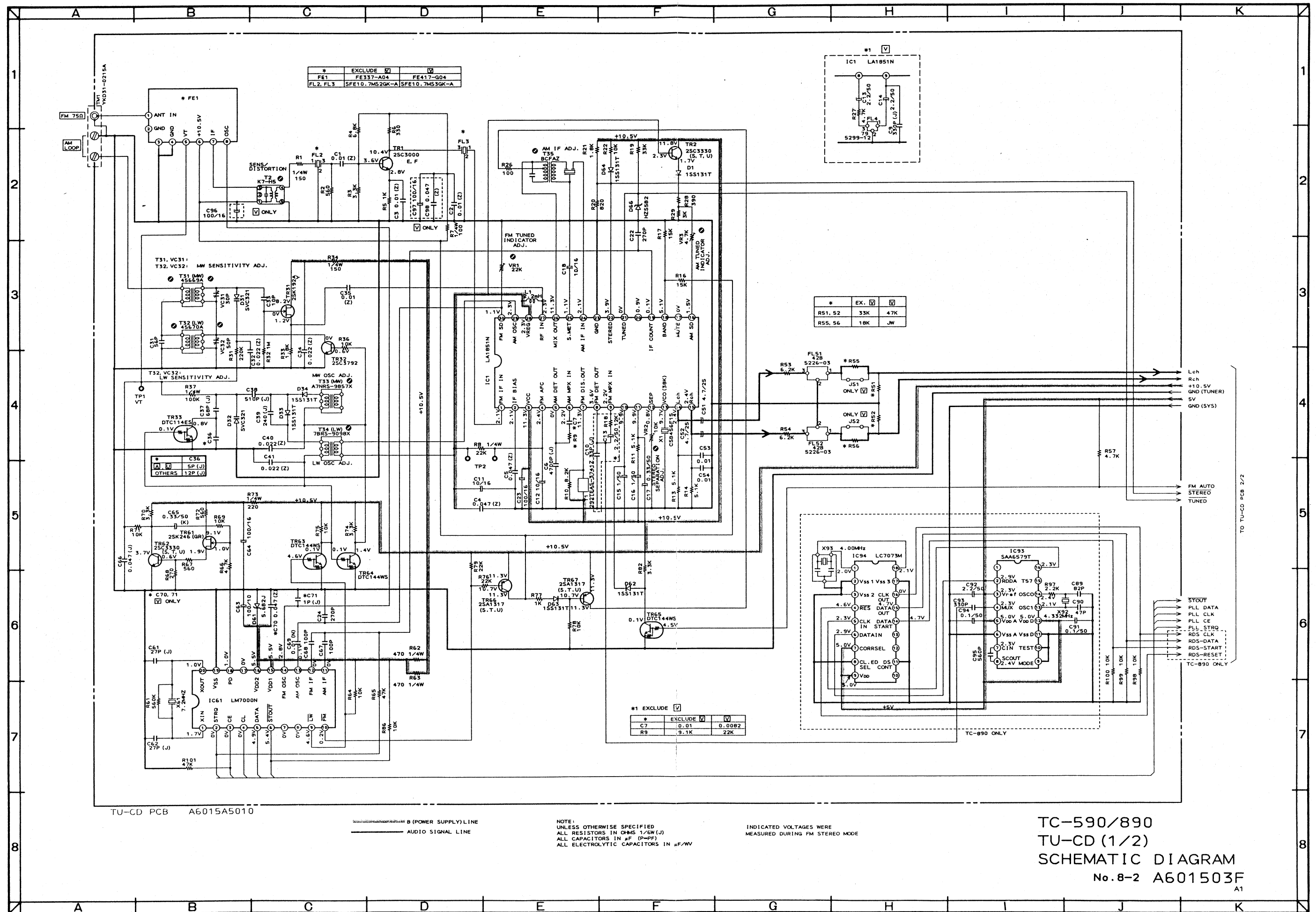


SYSCON PCB A6016A502A

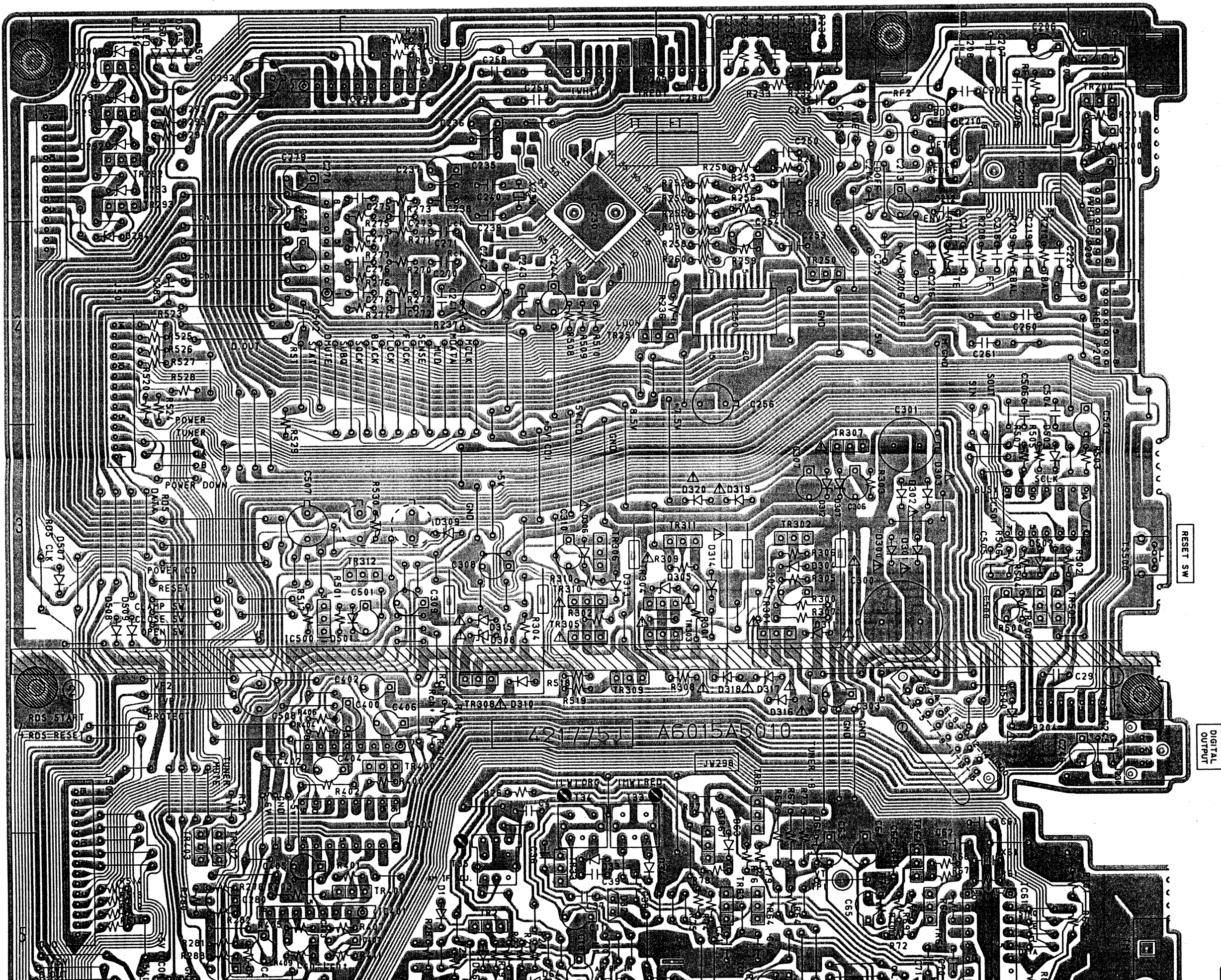


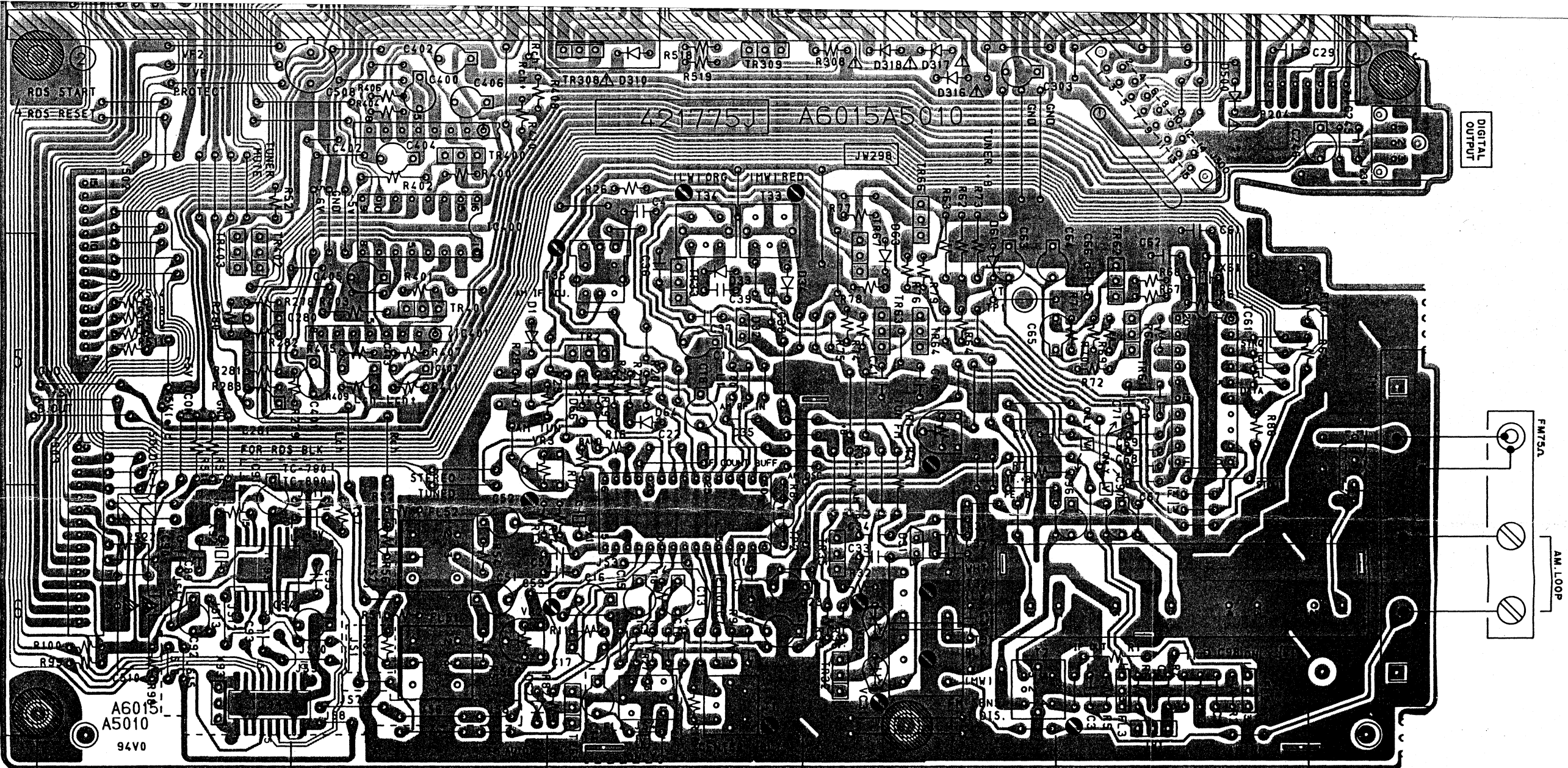
OPERATION PCB A6016A502B

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT
PARTS INFORMATION.



TU-CD PCB A6015A5010





PRINCIPAL PARTS LOCATION

ICs			
IC1	D6	TR35	C6
IC61	B5	TR61	B5
IC93	F6	TR62	B5
IC94	F6	TR63	C5
IC200	B1	TR64	C5
IC230	D1,2	TR65	D6
IC250	C2	TR66	C4
IC270	E2	TR67	C5
IC290	E1	TR200	A1
IC400	E4,5	TR250	C2
IC401	E5	TR251	C,D2
IC402	E4	TR290	F1
IC500	E3	TR291	F1
IC501	B3	TR292	F1
CONNECTORS			
J230	A4	TR293	F1
J300	B4	TR301	C4
J500	F1	TR302	C3
J501	F2	TR303	C,D4
J502	F5	TR304	C,D3
J503	F6	TR305	D4
P200	A2	TR306	D3
P201	A2	TR307	C3
P202	D1	TR308	D4
P203	C1	TR309	D4
P204	A,B4	TR310	D3
TRANSISTORS			
TR1	B6	TR311	C3
TR2	D5	TR312	E3
TR32	C6	TR400	E4
TR33	D5	TR401	E5
TRANSISTORS			
TR1	B6	TR402	F5
TR2	D5	TR403	F5
TR32	C6	TR500	B3
TR33	D5	TR501	B3

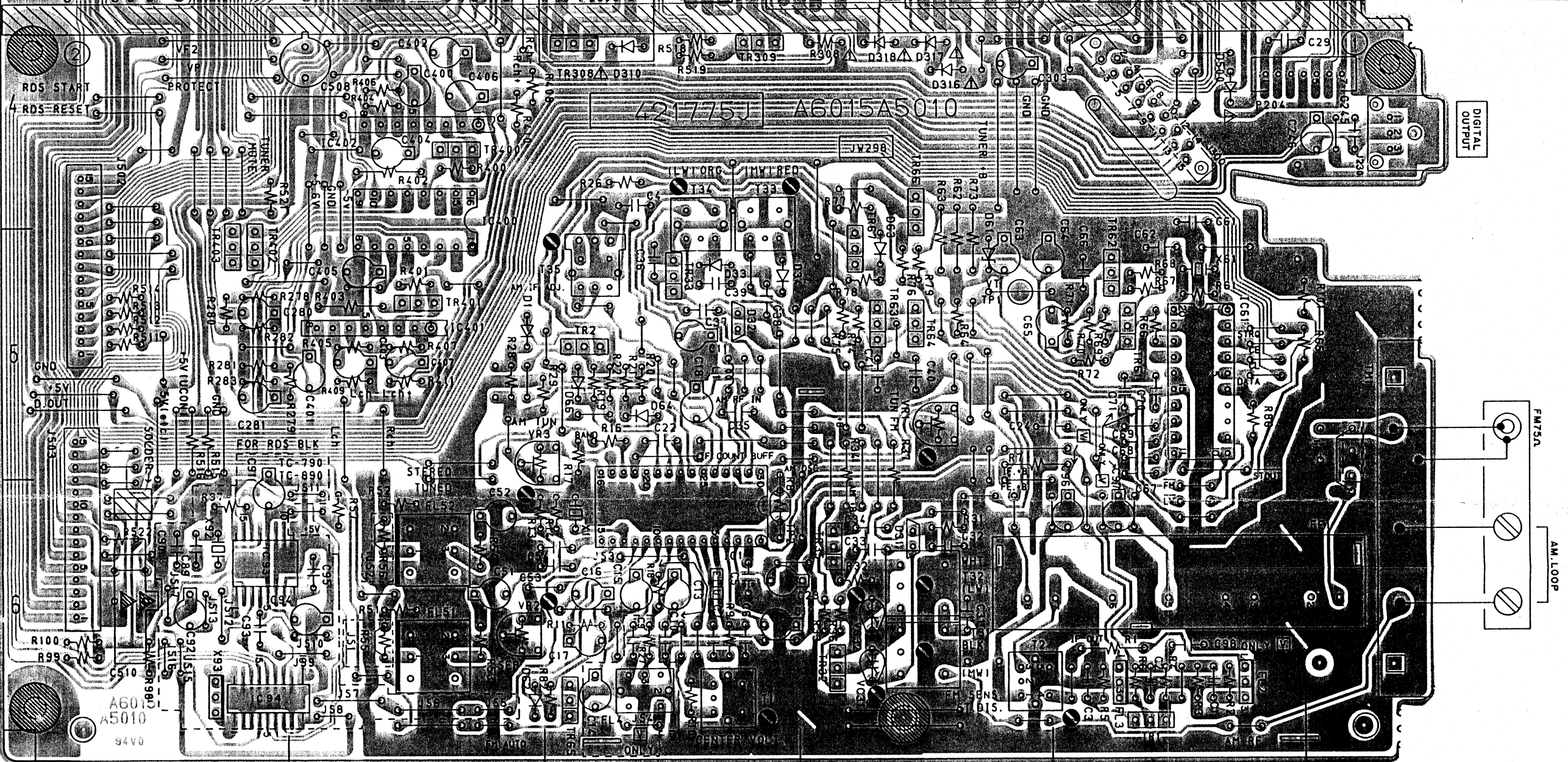
WARNING: Δ INDICATES SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURERS RECOMMENDED PARTS

AVERTISSEMENT: Δ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.

DIGITAL
OUTPUT

FM752



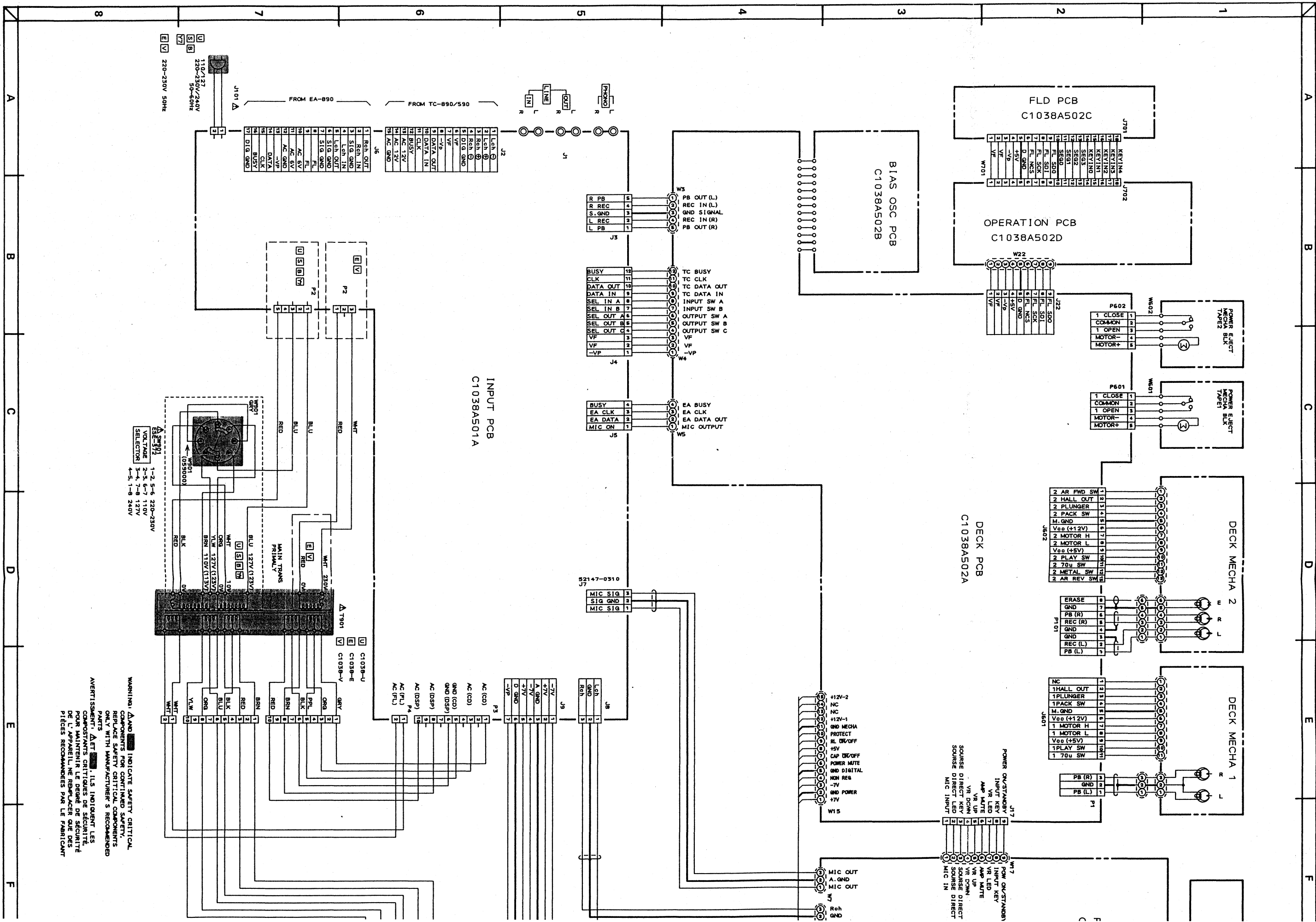
PRINCIPAL PARTS LOCATION

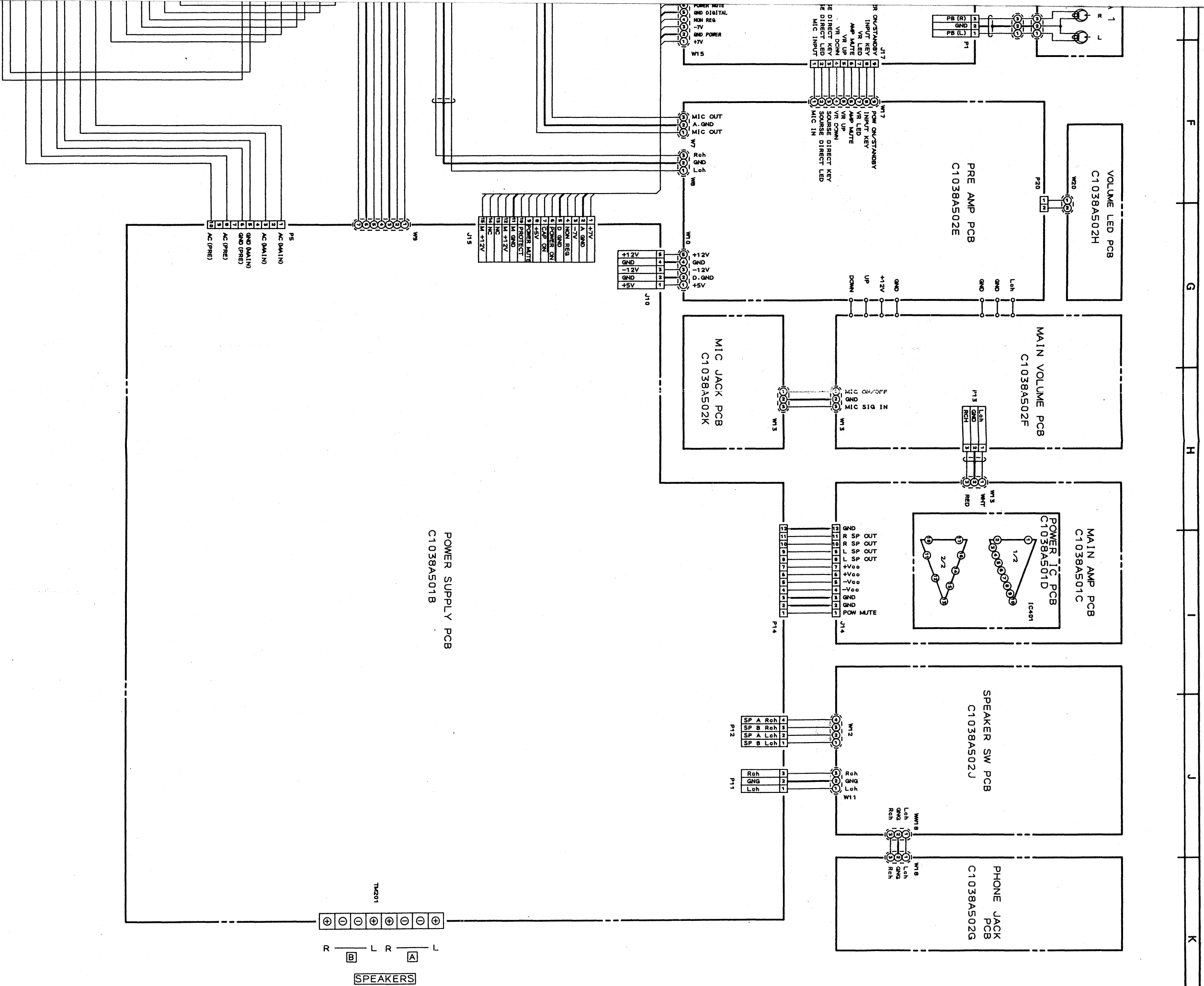
ICs		
IC1	D6	TR35
IC61	B5	TR61
IC93	F6	TR62
IC94	F6	TR63
IC200	B1	TR64
IC230	D1,2	TR65
IC250	C2	TR66
IC270	E2	TR67
IC290	E1	TR200
IC400	E4,5	TR250
IC401	E5	TR251
IC402	E4	TR290
IC500	E3	TR291
IC501	B3	TR292
CONNECTORS		
J230	A4	TR301
J300	B4	TR302
J500	F1	TR303
J501	F2	TR304
J502	F5	TR305
J503	F6	TR306
P200	A2	TR307
P201	A2	TR308
P202	D1	TR309
P203	C1	TR310
P204	A,B4	TR311
TRANSISTORS		
TR1	B6	TR400
TR2	D5	TR401
TR32	C6	TR402
TR33	D5	TR403
TR501	B3	TR500
		TR501

WARNING: Δ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

AVERTISSEMENT: Δ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.

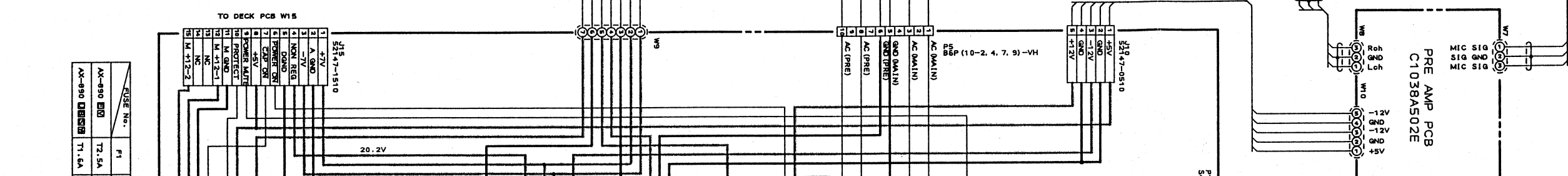
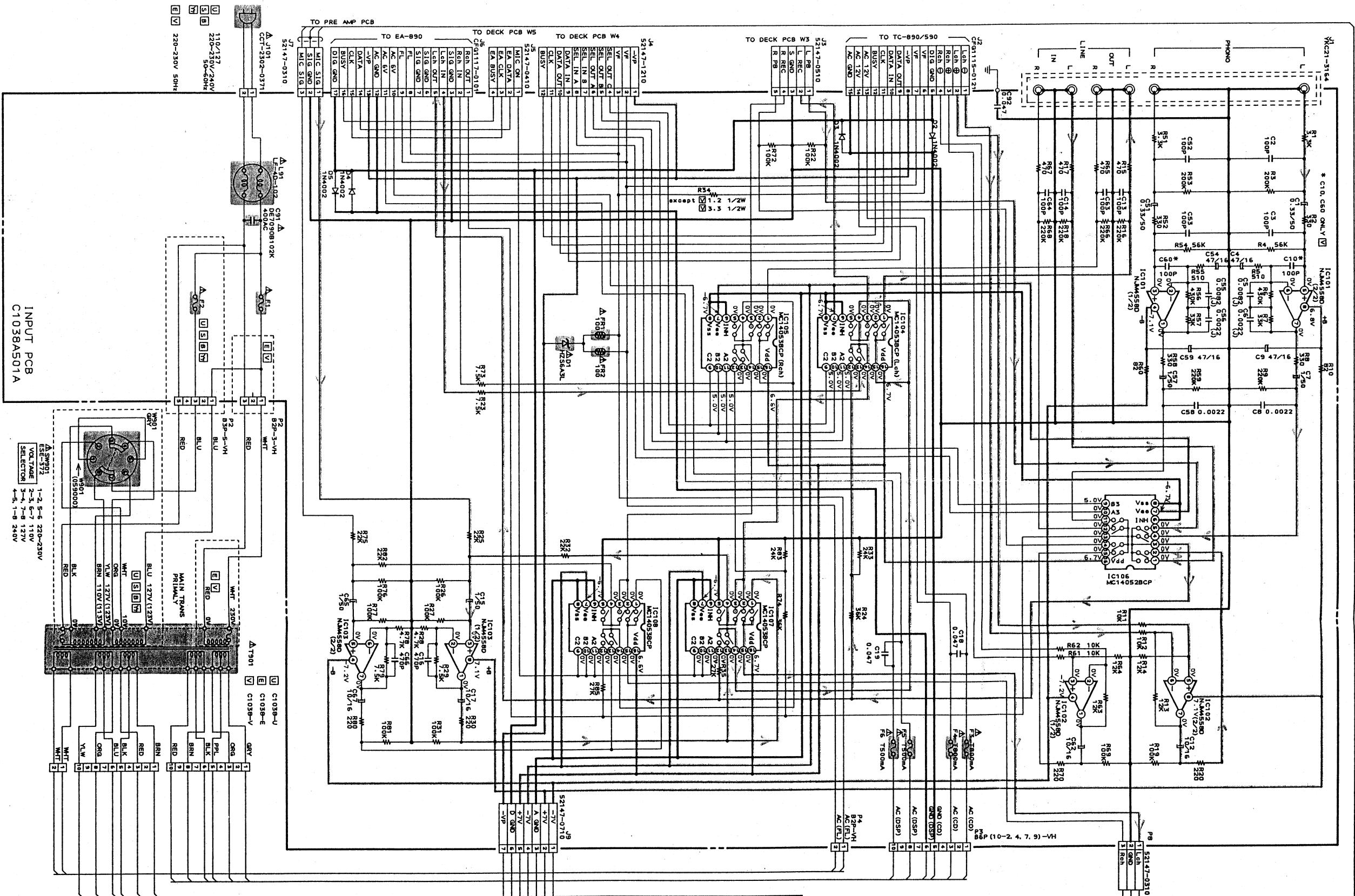
NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.



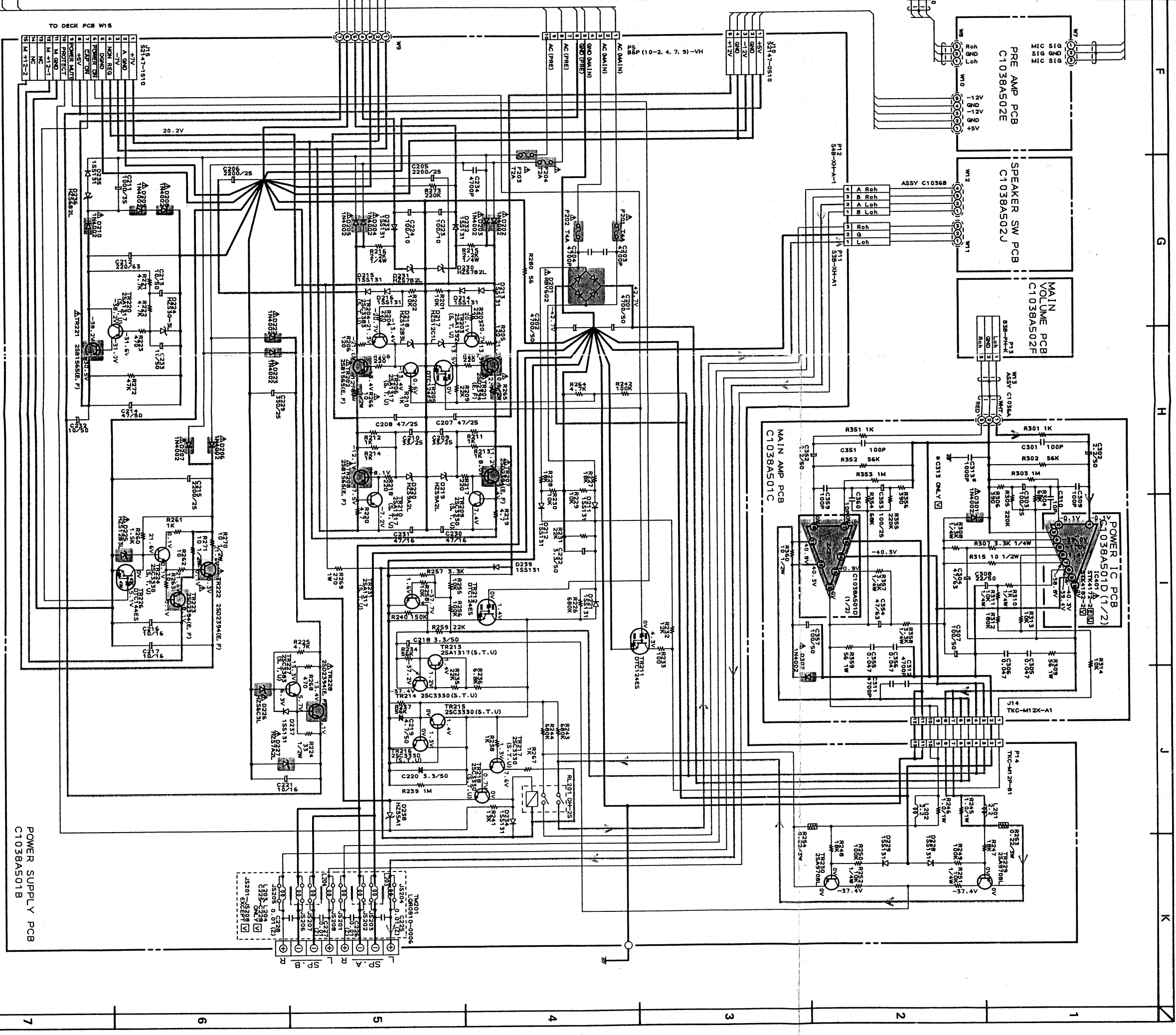


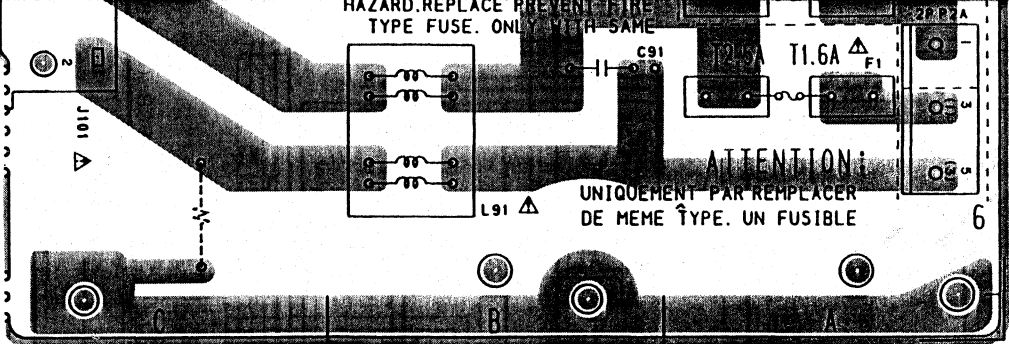
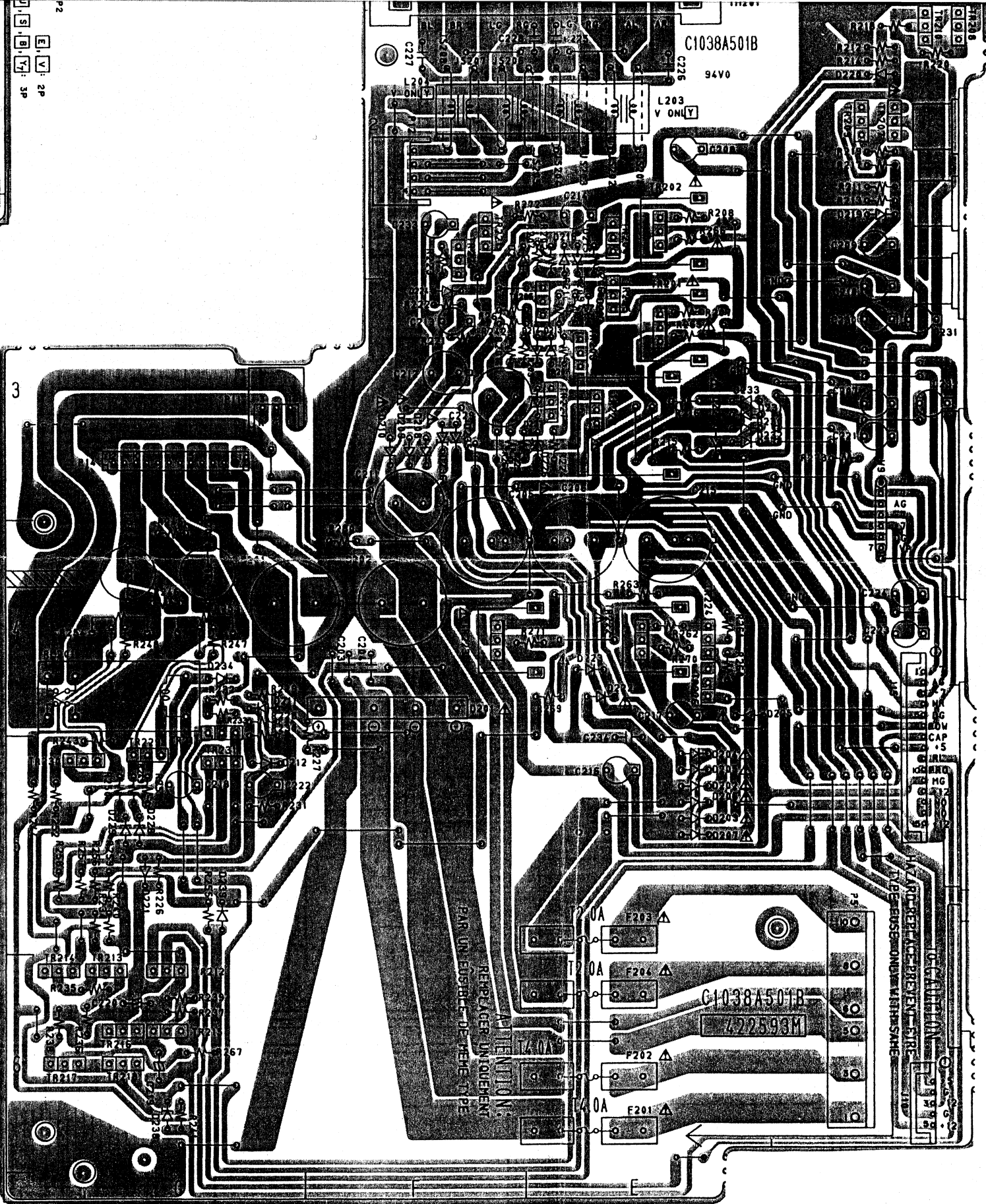
AX-890
CONNECTION DIAGRAM
No. 8-4 C103801M
A1

INDICATE SAFETY CRITICAL,
OR CONTINUED SAFETY,
ITY CRITICAL COMPONENTS
MANUFACTURER'S RECOMMENDED



RISE No.	F1
AX-890 EIO	72.5A
AX-890 EISD	11.6A





WARNING: Δ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY.
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
RECOMMENDED PARTS.

AVERTISSEMENT: Δ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL
NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT
PARTS INFORMATION.

PRINCIPAL PARTS LOCATION

CONNECTORS

J10 D6
J15 D4,5
P5 D6
P11 G3
P12 F2
P14 G3
W9 D3,4

TRANSISTORS

TR201 E3
TR202 E2
TR203 E3
TR204 E2
TR205 E3
TR206 E3
TR207 D2
TR208 D2
TR209 D2
TR210 D2
TR211 D2
TR212 G6
TR213 G6
TR214 G6
TR215 G6
TR216 G6
TR217 G6
TR218 G6
TR220 F2
TR221 F2
TR222 E4
TR223 F4
TR224 E4
TR226 E4
TR227 E3
TR228 E3
TR229 G5
TR230 G5
TR231 G5

INDICATED VOLTAGES WERE MEASURED DURING PM MODE
(CONDITION: TAPE 1, PMO PLAN, NORMAL, TAPE, DOUBLY OFF)

WARNING: A AND B INDICATE SAFETY CRITICAL
COMPONENTS FOR CONTINUED SAFETY.
REPLACE SAFETY CRITICAL COMPONENTS
PARTS WITH MANUFACTURER'S RECOMMENDED
EQUIVALENTS. A ET B IL INDICENT LES
COMPOSANTS CRITIQUES DE SECURITE.
DE L'APPAREIL. IL NE DOIT PAS ETRE
REPLACE PAR DES EQUIVALENTS NON RECOMMANDES PAR LE FABRICANT.

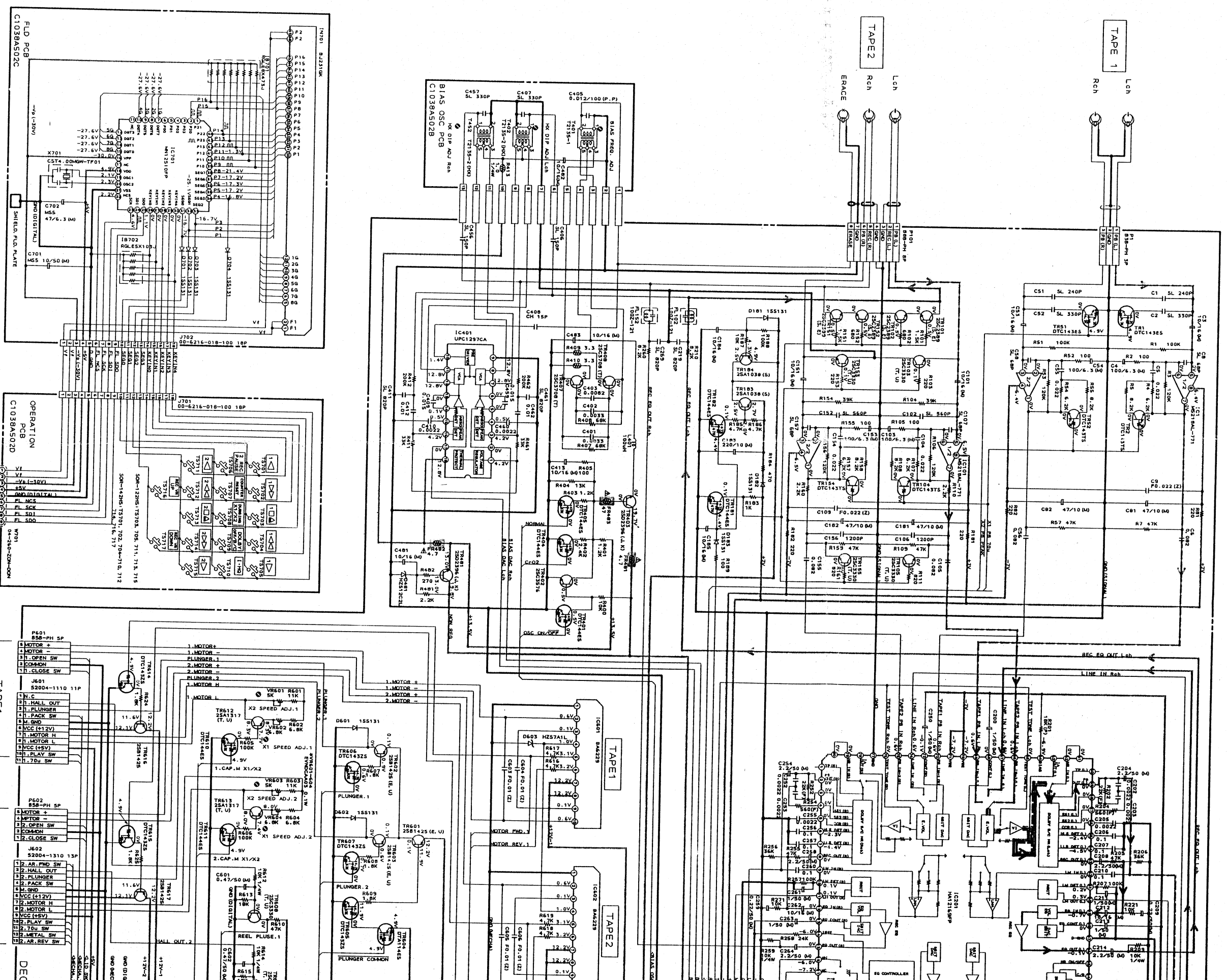
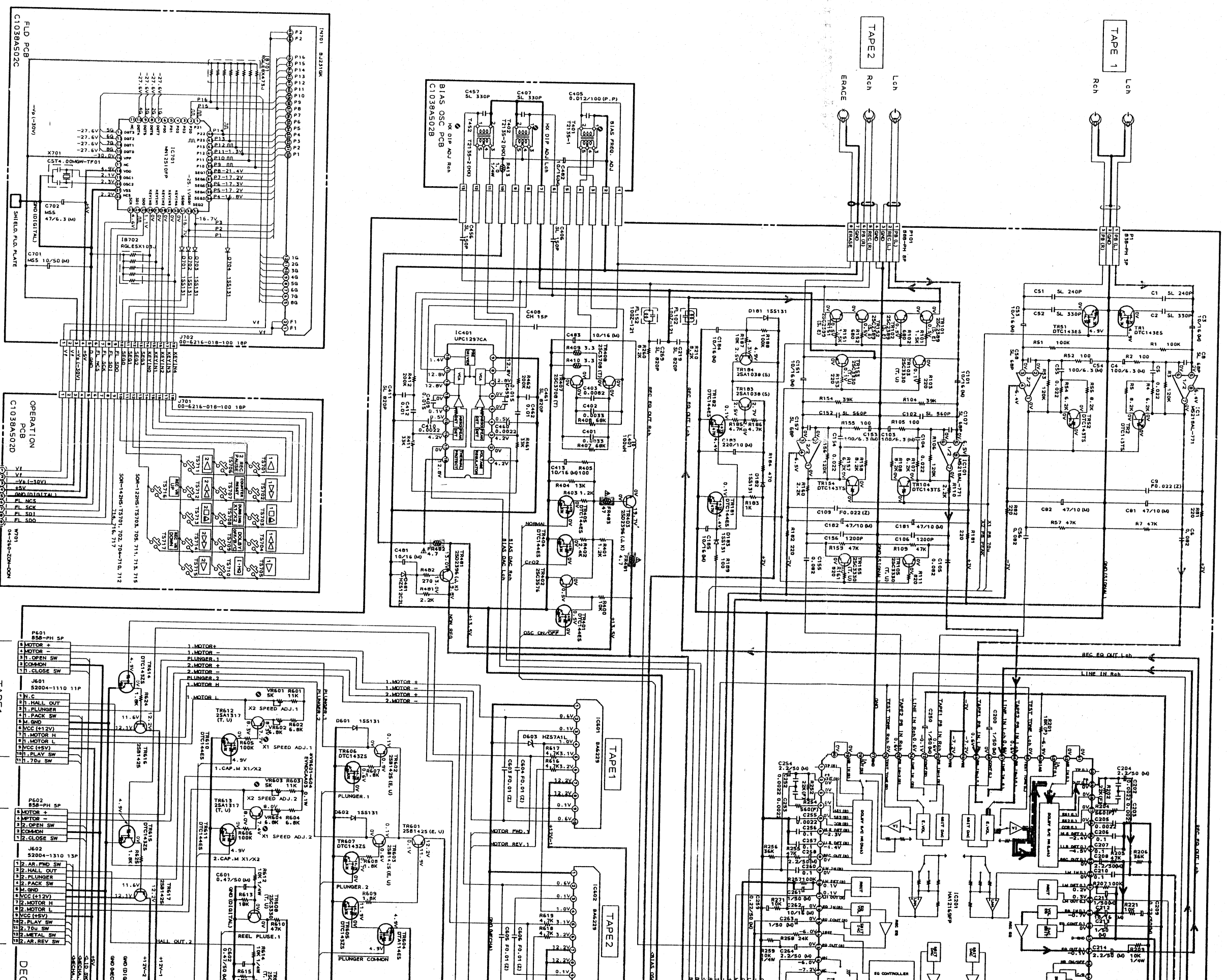
NOTE: ALL OTHERS ARE SPECIFIED
ALL RESISTORS IN OHMS (R) (K) (M)
ALL CAPACITORS IN P.F. (P) (M) (U)
ALL INDUCTORS IN MH (H)

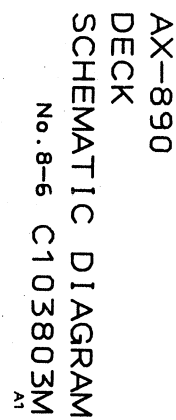
WARNING: A AND B INDICATE SAFETY CRITICAL
COMPONENTS FOR CONTINUED SAFETY.
REPLACE SAFETY CRITICAL COMPONENTS
PARTS WITH MANUFACTURER'S RECOMMENDED
EQUIVALENTS. A ET B IL INDICENT LES
COMPOSANTS CRITIQUES DE SECURITE.
DE L'APPAREIL. IL NE DOIT PAS ETRE
REPLACE PAR DES EQUIVALENTS NON RECOMMANDES PAR LE FABRICANT.

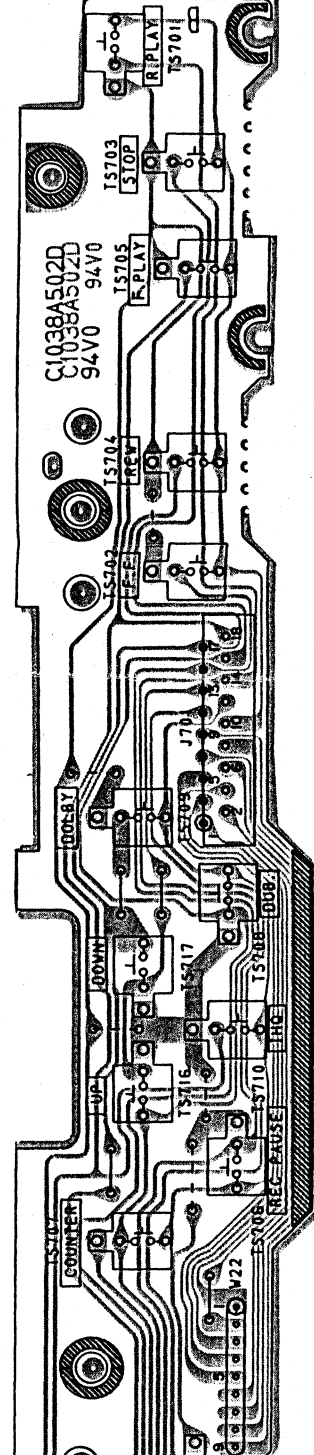
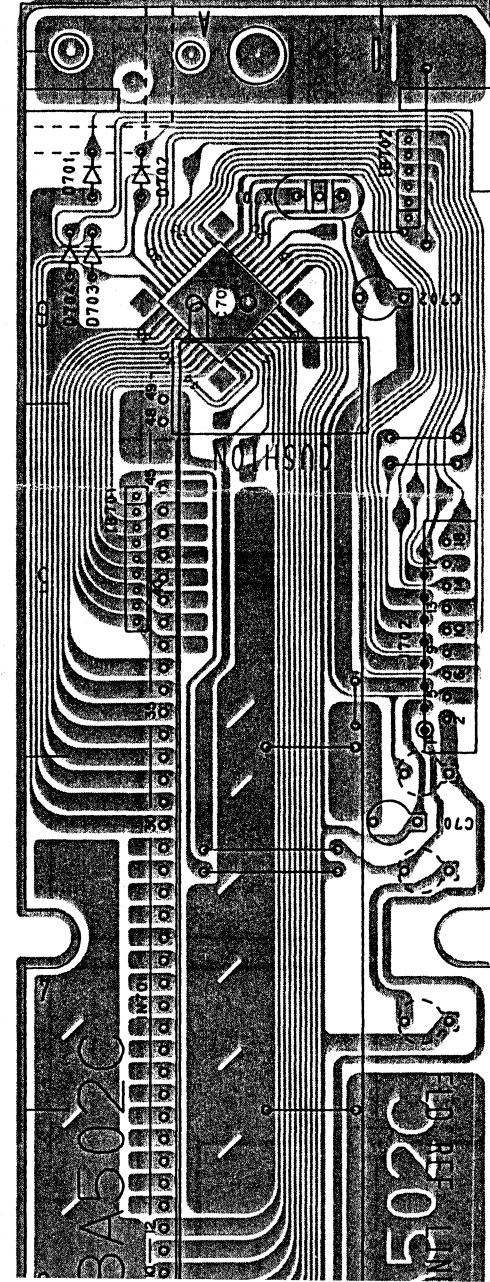
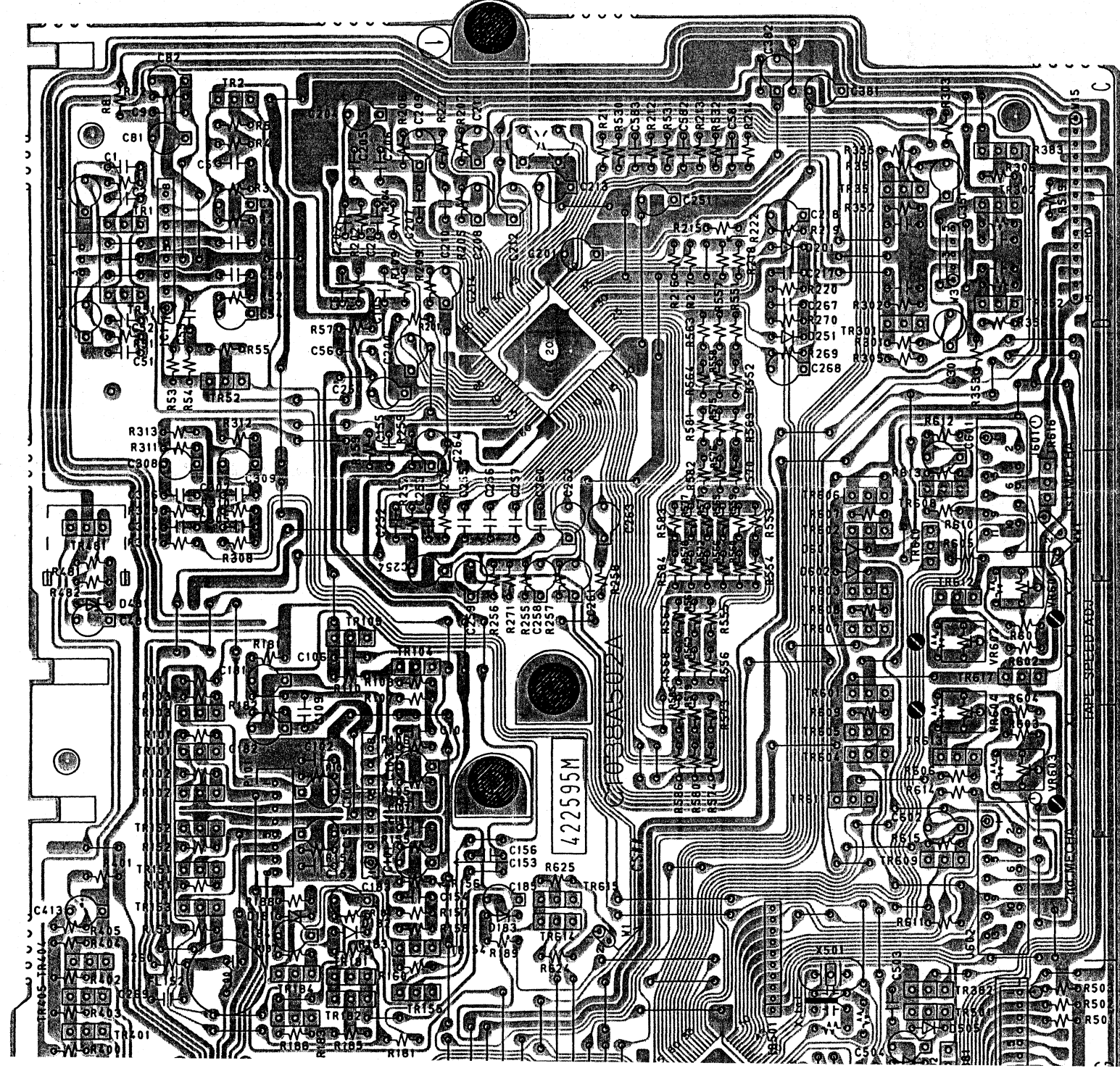
NOTE: ALL OTHERS ARE SPECIFIED
ALL RESISTORS IN OHMS (R) (K) (M)
ALL CAPACITORS IN P.F. (P) (M) (U)
ALL INDUCTORS IN MH (H)

WARNING: A AND B INDICATE SAFETY CRITICAL
COMPONENTS FOR CONTINUED SAFETY.
REPLACE SAFETY CRITICAL COMPONENTS
PARTS WITH MANUFACTURER'S RECOMMENDED
EQUIVALENTS. A ET B IL INDICENT LES
COMPOSANTS CRITIQUES DE SECURITE.
DE L'APPAREIL. IL NE DOIT PAS ETRE
REPLACE PAR DES EQUIVALENTS NON RECOMMANDES PAR LE FABRICANT.

NOTE: ALL OTHERS ARE SPECIFIED
ALL RESISTORS IN OHMS (R) (K) (M)
ALL CAPACITORS IN P.F. (P) (M) (U)
ALL INDUCTORS IN MH (H)







PRINCIPAL PARTS LOCATION

ICs	IC1	D3	TR408	H3
	IC101	F4	TR481	E3
	IC201	D4,5	TR501	G6
	IC401	H3	TR503	H5
	IC501	G5	TR504	H5,6
	IC502	H6	TR505	H5,6
	IC503	H5	TR506	H6
	IC601	G4	TR508	H5
	IC602	G4	TR601	E6
			TR602	E6
			TR603	E6
			TR604	F6
			TR605	F6
			TR606	E6
			TR607	E6
			TR608	E6
TRANSISTORS				
TR1	D3	TR609	F6	
TR2	C3	TR610	E6	
TR51	D3	TR611	F6	
TR52	D3	TR612	E6	
TR101	F3	TR613	F6	
TR102	F3	TR614	F4,5	
TR103	F3	TR615	F4,5	
TR104	E4	TR616	E6	
TR105	F3	TR617	E6	
TR151	F3			
TR152	F3			
TR153	F3			
TR154	F4			
TR155	G4			
TR181	G4			
TR182	G4			
TR183	G3			
TR184	G3			
TR301	D6			
TR302	D6			
TR351	C6			
TR352	D6			
TR381	G6			
TR382	G6			
TR383	C6			
TR401	G3			
TR402	G3			
TR403	G3			
TR404	F3			
TR405	G3			
TR407	H3			
CONNECTORS				
		J17	G6	
		J22	H4	
		J601	E6	
		J602	F6	
		P1	D3	
		P101	F3	
		P601	H5	
		P602	H5	
WIRES				
		W3	D6	
		W4	H, G	
		W5	H5	
		W15	C, D	

TRANSISTORS

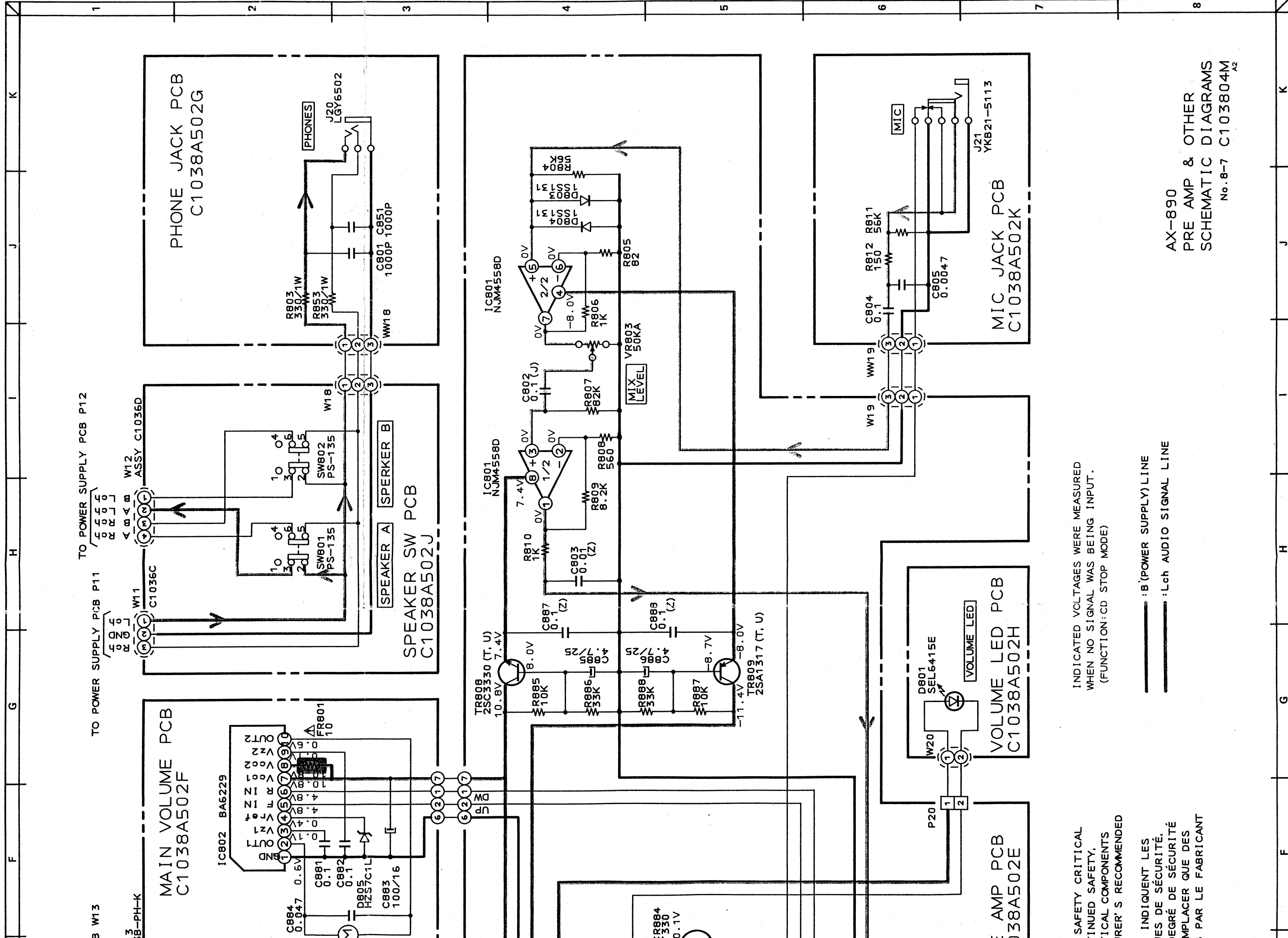
CONNECTORS

WIREs

WARNING:  INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT:  INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

AVERTISSEMENT: Δ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL,
NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.

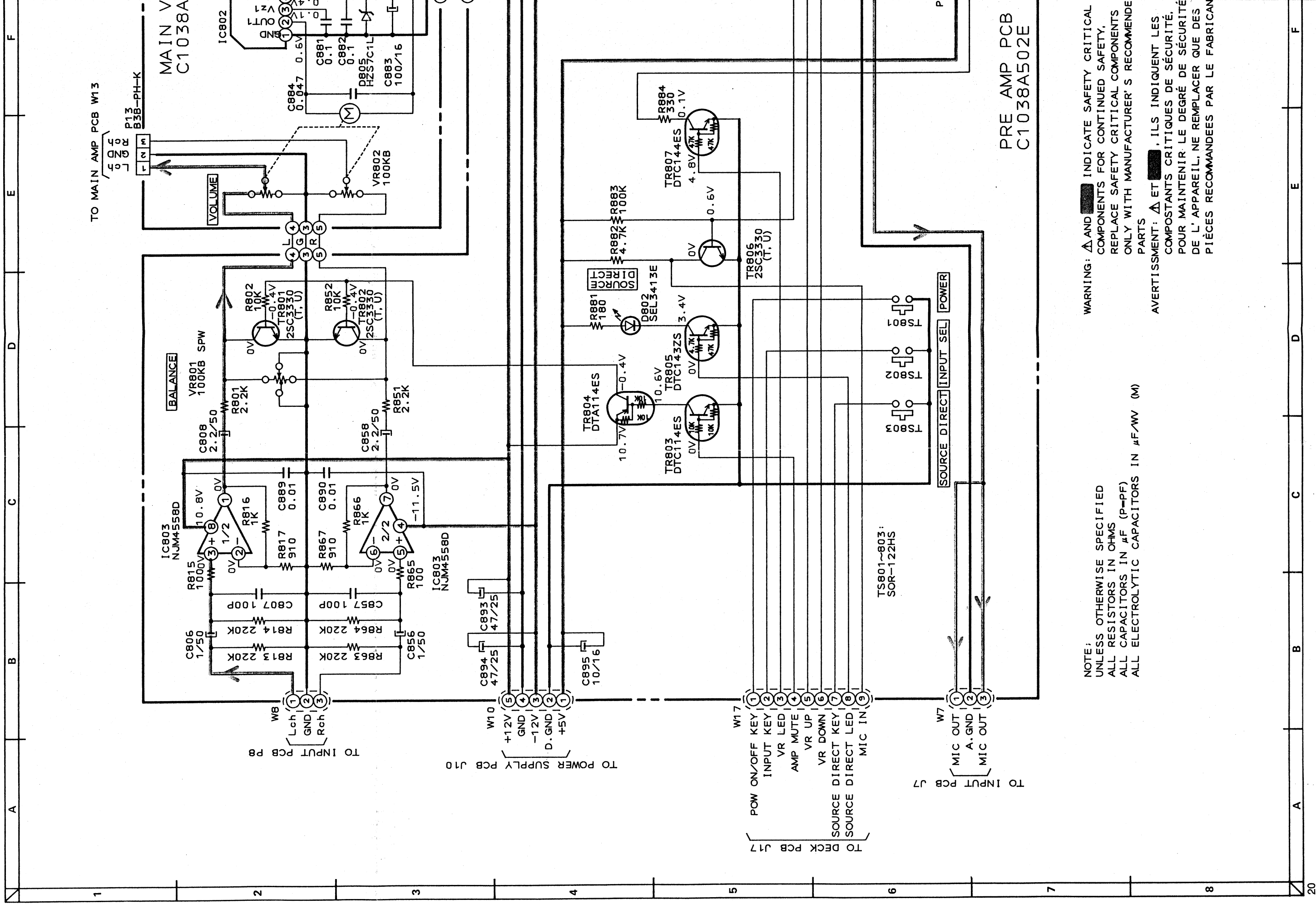


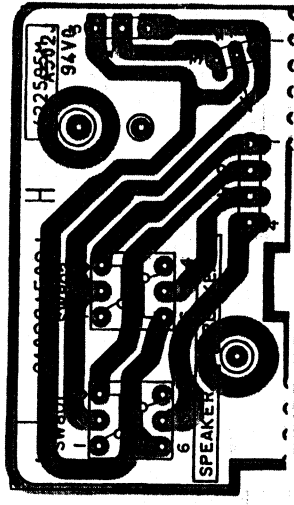
SAFETY CRITICAL
 CONTINUED SAFETY.
 CRITICAL COMPONENTS
 REPAIRER'S RECOMMENDED

INDIQUENT LES
 PARTIES DE SÉCURITÉ.
 ÉLÉMENTS DE SÉCURITÉ
 À REMPLACER QUE DES
 RECOMMANDÉS PAR LE FABRICANT

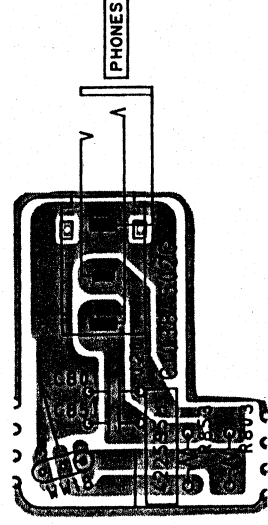
INDICATED VOLTAGES WERE MEASURED
 WHEN NO SIGNAL WAS BEING INPUT.
 (FUNCTION: CD STOP MODE)

——: B (POWER SUPPLY) LINE
 ——: Lch AUDIO SIGNAL LINE

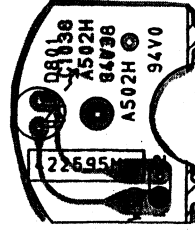




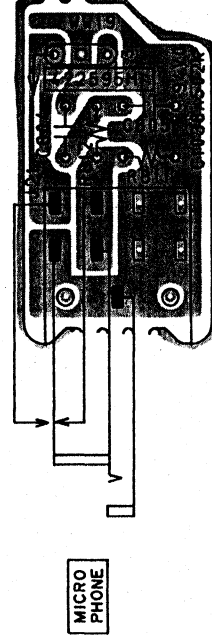
SPEAKER SW PCB C1038A502J



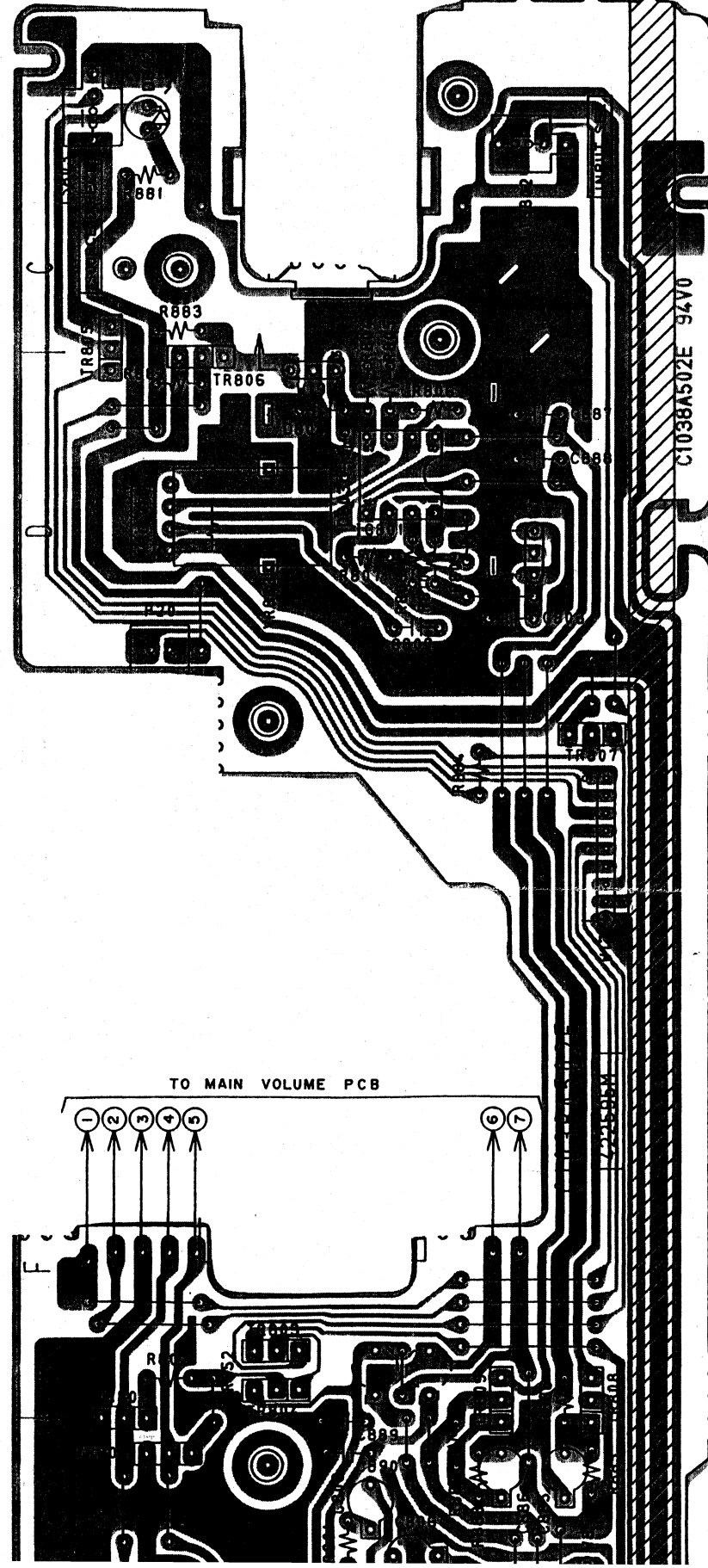
PHONE JACK PCB C1038A502G



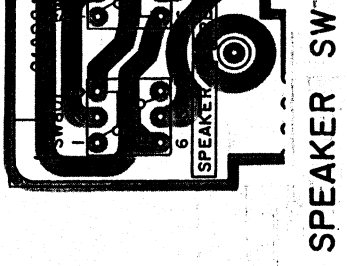
VOLUME LED PCB
C1038A502H



MIC JACK PCB C1038A502K



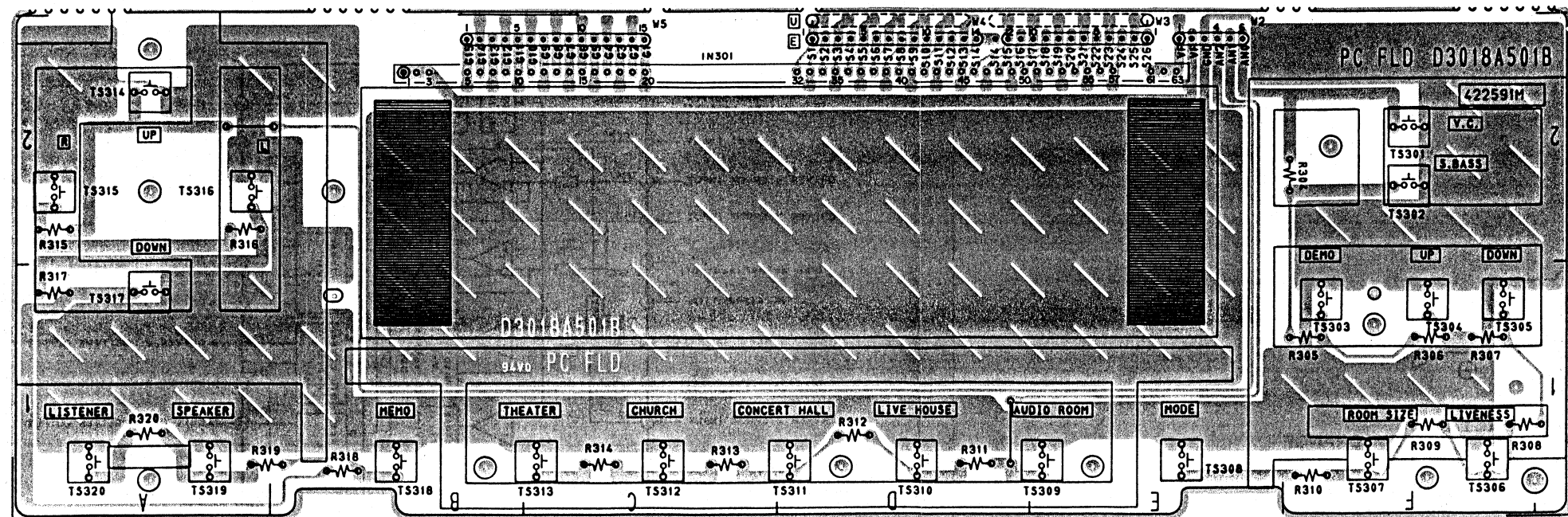
PRE AMP PCB C1038A502E



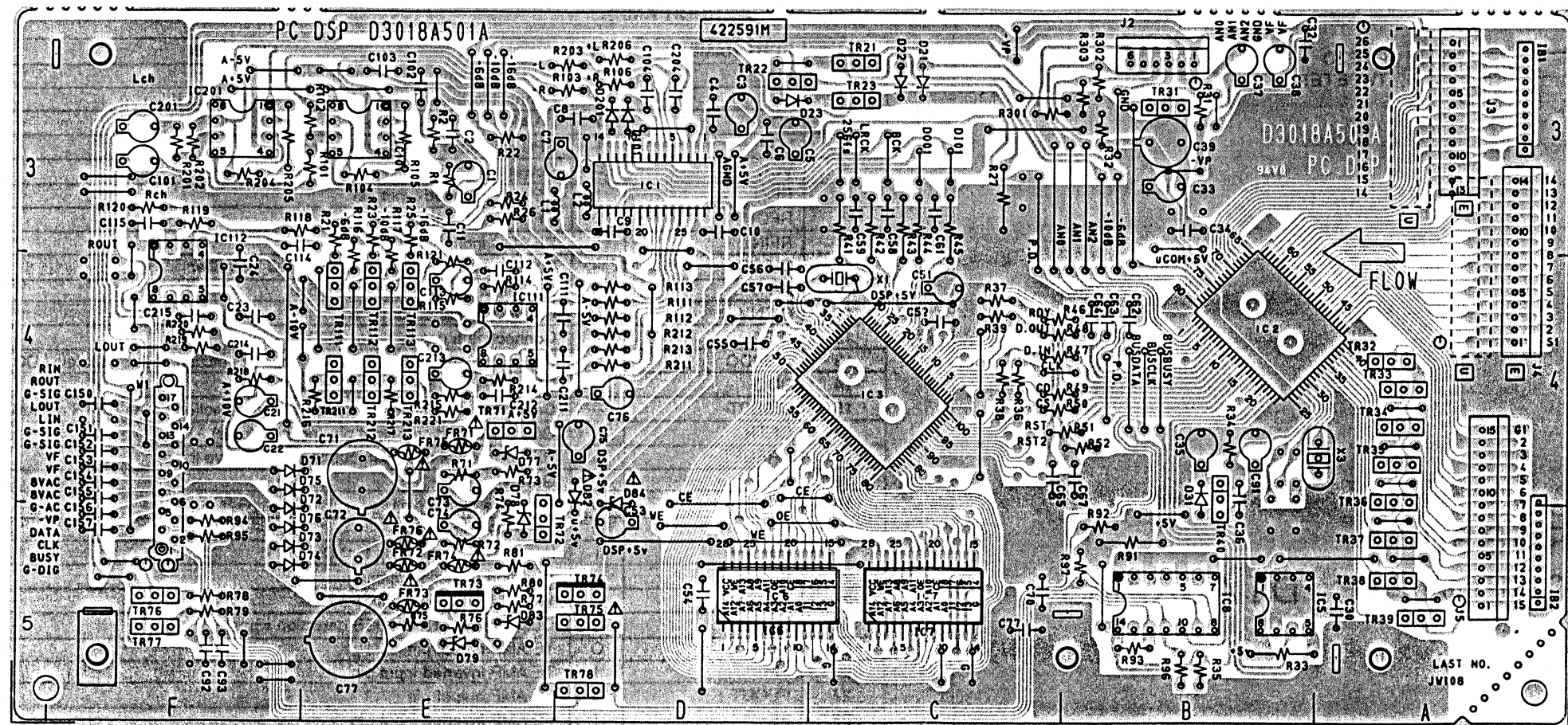
SPEAKER SW

VOLUME
C10381





FLD PCB D3018A501B



DSP PCB D3018A501A

WARNING: Δ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

AVERTISSEMENT: Δ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.

PRINCIPAL PARTS LOCATION

TRANSISTORS

TR21	.....	C3
TR22	.....	D3
TR23	.....	C3
TR31	.....	B3
TR32	.....	A4
TR33	.....	A4
TR34	.....	A4
TR35	.....	A4
TR36	.....	A4,5
TR37	.....	A5
TR38	.....	A5
TR39	.....	A5
TR40	.....	B4,5
TR71	.....	E4
TR72	.....	E5
TR73	.....	E5
TR74	.....	D5
TR75	.....	D5
TR76	.....	F5
TR77	.....	F5
TR78	.....	D5
TR111	.....	E4
TR112	.....	E4
TR113	.....	E4
TR211	.....	E4
TR212	.....	E4
TR213	.....	E4

ICs

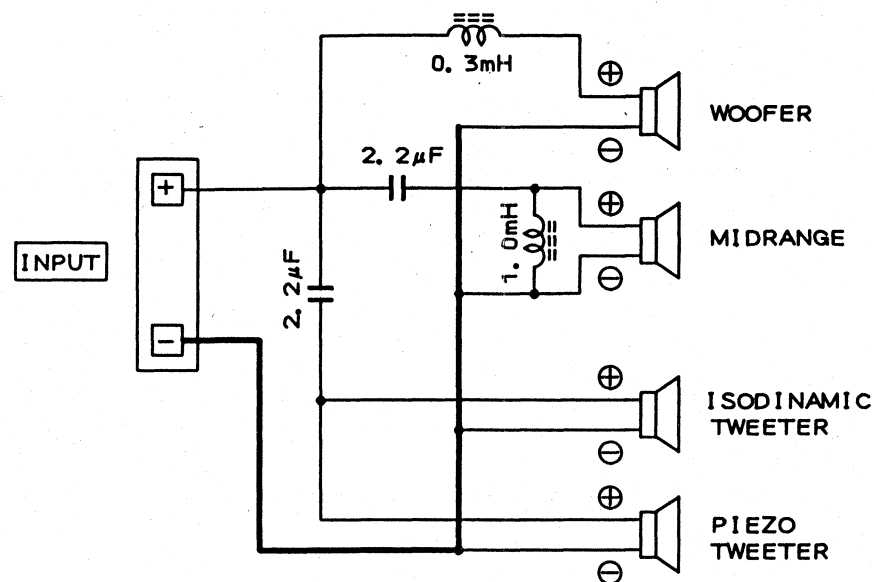
IC1	.....	D3
IC2	.....	B4
IC3	.....	C4
IC5	.....	B5
IC6	.....	D5
IC7	.....	C5
IC8	.....	B5
IC101		E3
IC111		E4
IC112		F4
IC201		F3

CONNECTORS

J2		B3
J3		A3
J4		A3,4
J5		A4,5

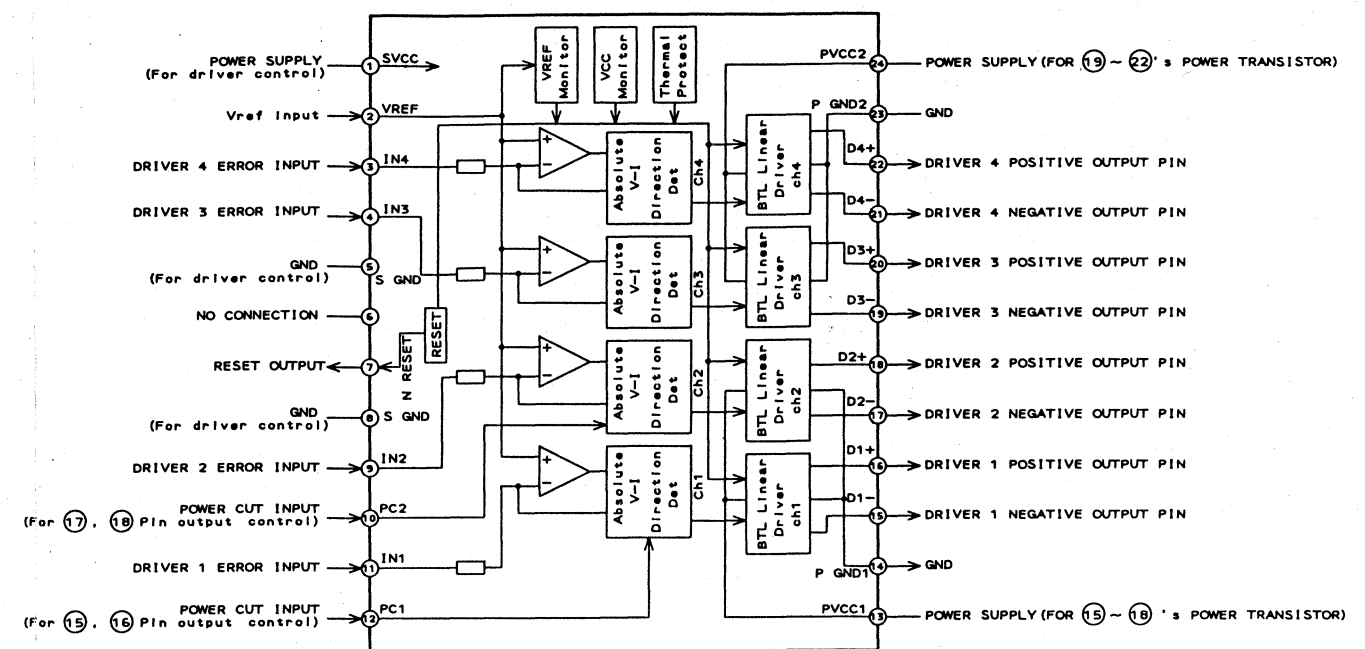
WIRES

W1		F4,5
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SCHEMATIC DIAGRAMS

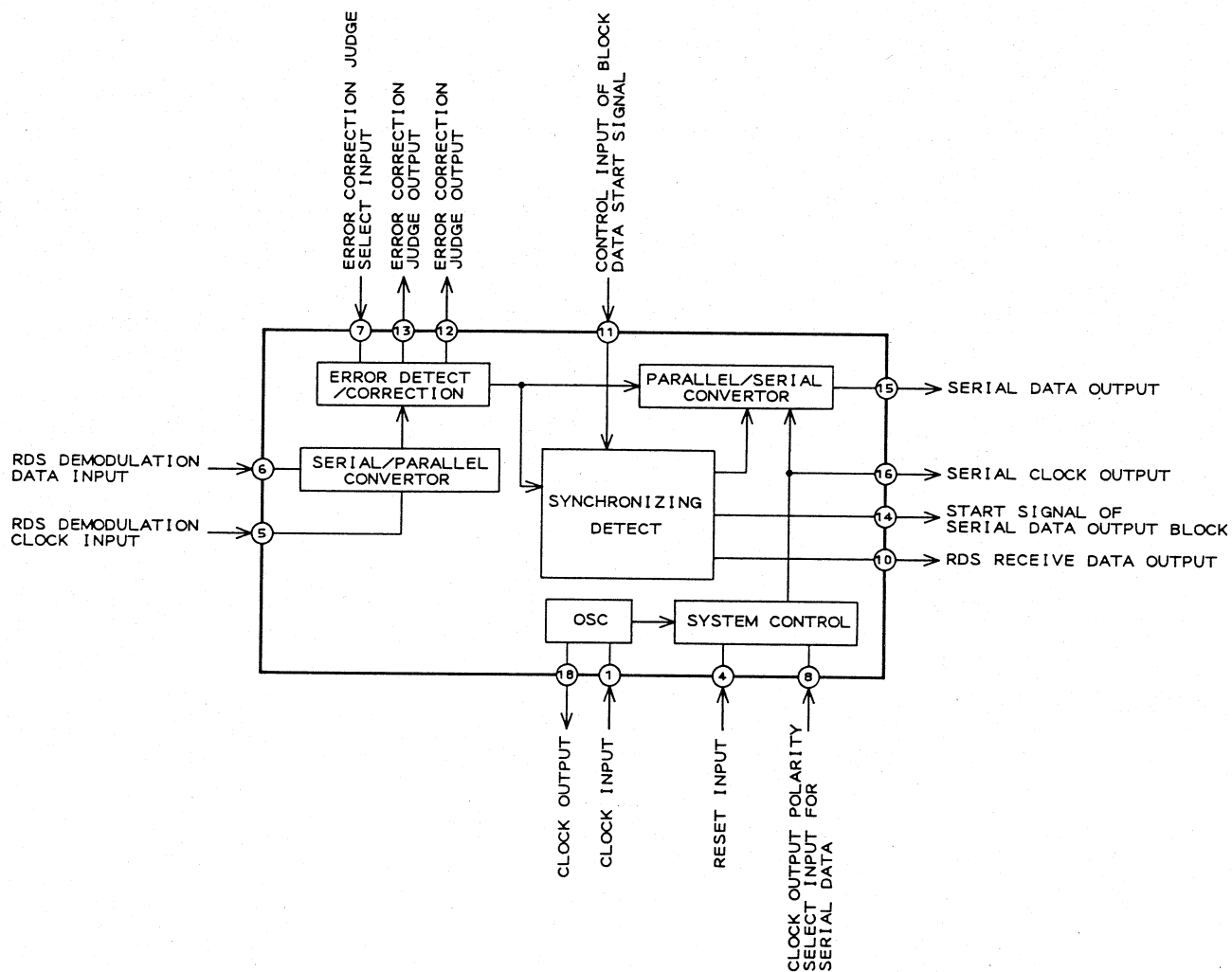
AN8389S (LINEAR MOTOR DRIVER)



AN8806SB (I-V/ERROR AMP)

Pin No.	PORT NAME	I/O	FUNCTION
1	PD	I	PD signal input for LD output monitor
2	LD	O	Connect to the external transistor's base for LD drive
3	LDON	I	LD APC on/off select input
4	LDP	I	APC reference voltage select input
5	VCC	-	Power supply
6	RF-	I	RF AMP inverted input pin
7	RFOUT	O	RF inverted amp output
8	RFIN	I	RF AGC input pin
9	C.AGC	-	Capacitor connecting pin for RF AGC loop filter
10	AR	O	RF output pin after AGC operation
11	C.ENV	-	Connecting capacitor for RF
12	C.EA	-	Connecting a capacitor for AMP
13	S.SBDO	-	Capacitor connecting pin for low speed detection of the dark level DO detection
14	BDO	O	BDO detection output pin (positive logic)
15	C.SBRT	-	Capacitor connecting pin for low speed detection of the OFTR detection
16	OFTR	O	Off track detection output pin (positive logic)
17	NRFDET	O	RF signal level detection output pin (negative logic)
18	GND	-	Ground
19	ENV	O	Envelope output pin
20	VREF	O	1/2 VCC output pin
21	LD OFF	I	Input pin of forced stop for LD APC
22	VDET	O	Vibration detection output pin
23	TEBPF	I	Vibration detection input pin
24	CROSS	O	Output pin for TE CROSS detection signal
25	TEOUT	O	TE AMP output pin
26	TE-	I	TE AMP inverted input pin
27	FEOUT	O	FE AMP output pin
28	FE-	I	FE AMP inverted input pin
29	FBAL	I	Control signal input pin for FO balance adjustment
30	TBAL	I	Control signal input pin for TE balance adjustment
31	PDFR	-	Resistor connection pin for setting I-V conversion resistance value of PDE
32	PDER	-	Resistor connection pin for setting I-V conversion resistance value of PDF
33	PDE	I	Connect to pin diode E
34	PDF	I	Connect to pin diode F
35	PDBD	I	Connect to B,D of 4 separation astigmatic PD
36	PDAC	I	Connect to B,D of 4 separation astigmatic PD

LC7073M (RDS DATA PROCESS)



SAA6579T (RDS DEMODULATOR)

PIN No	PORT NAME	I/O	FUNCTION
1	QUAL	O	QUALITY INDICATION OUTPUT
2	RDDA	O	RDS DATA OUTPUT
3	VREF	—	REFERENCE VOLTAGE OUTPUT
4	MUX	I	MULTIPLEX SIGNAL INPUT
5	VDD	—	+5 V SUPPLY VOLTAGE FOR ANALOG PART
6	VSS	—	GND FOR ANALOG PART
7	CIN	I	SUBCARRIER INPUT TO COMPARATOR
8	SCOUT	O	SUBCARRIER OUTPUT OF RECONSTRUCTION FILTER
9	MODE	I	OSCILLATOR MODE / TEST CONTROL INPUT
10	TEST	I	TEST ENABLE INPUT
11	VSS	—	GND FOR DIGITAL PART
12	VDD	—	+5 V SUPPLY VOLTAGE FOR DIGITAL PART
13	OSC1	I	OSCILLATOR INPUT
14	OSC0	O	OSCILLATOR OUTPUT
15	T57	O	57 kHz CLOCK SIGNAL OUTPUT
16	RDCL	O	RDS CLOCK OUTPUT